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Hunterian Lectures

ON

THE PATHOLOGY AND SURGERY OF CERTAIN DISEASES OF THE PANCREAS.

Delivered before the Royal College of Surgeons of England on March 7th, 9th, and 11th, 1904,

BY A. W. MAYO ROBSON, F.R.C.S. ENG.,

HUNTERIAN PROFESSOR, ROYAL COLLEGE OF SURGEONS OF ENGLAND.

LECTURE II.[1]

Delivered on March 9th.

INFLAMMATORY AFFECTIONS OF THE PANCREAS.

MR. PRESIDENT AND GENTLEMEN,—If we were to base our opinions on the post-mortem records of the past, inflammatory affections of the pancreas would have to be considered among the rarest of diseases, but recent clinical observations and operative experience show that such conclusions would be far from accurate, and I think I shall be able to demonstrate both from my own and from the experience of others that inflammatory affections of the pancreas or its ducts are very much more common than is generally supposed.

Classification.—Pancreatic inflammations may be catarrhal, in which the inflammatory trouble is in the ducts, or parenchymatous, in which the substance of the pancreas is involved. The former resemble the different forms of cholangitis with which, indeed, they are frequently associated, the latter bear more resemblance to inflammatory affections of the appendix, "suppurative and gangrenous appendicitis." The following shows the classification at a glance.

Catarrhal inflammations.—(*a*) Simple catarrh, acute and chronic; and (*b*) suppurative catarrh.

Parenchymatous inflammations.—Acute: (*a*) Hæmorrhagic pancreatitis: (1) ultra-acute, in which the hæmorrhage precedes the inflammation, the bleeding being profuse and both within and outside the gland; and (2) acute, in which inflammation precedes the hæmorrhage which is less profuse and is distributed in patches through the gland (*b*) Gangrenous pancreatitis. (*c*) Suppurative pancreatitis (diffuse suppuration). Subacute: Abscess of the pancreas (not diffuse suppuration). Chronic: (*a*) Interstitial pancreatitis: (1) interlobular; and (2) interacinar. (*b*) Cirrhosis of the pancreas.

Ætiology.—The etiology of pancreatitis may be classified under predisposing and exciting causes. Among the predisposing causes are: (*a*) Obstruction in the ducts, the result of gall-stones, duodenal catarrh, pancreatic calculi, cancer of the papilla or of the head of the pancreas, ulcer of the duodenum followed by cicatricial stenosis of the papilla, ascarides, and lumbrici. (*b*) Injury either from a bruise as by manipulation in operating, or from a crush, as by a blow in the epigastrium, or from wounding by a sharp instrument. (*c*) Hæmorrhage into the gland. (*d*) General ailments, such as typhoid fever, influenza, and mumps. (*e*) Certain anatomical peculiarities in the pancreas or its ducts. (*f*) Atheroma or fatty degeneration of the blood vessels. The chief exciting causes are: 1. Infection conveyed either (*a*) from the blood, as in syphilis or pyæmia; (*b*) from the duodenum, as in gall-stone obstruction, or gastro-intestinal catarrh; and (*c*) by extension inwards from adjoining organs, as in gastric ulcer, or cancer eroding the pancreas. 2. Irritation, as in alcoholism (doubtful).

The anatomy of the pancreas with its ducts opening into a portion of the intestine, never free from organisms, is the key to the etiology of pancreatitis, but even so were it not that the common bile-duct and the pancreatic duct are so closely related the pancreas would probably generally escape. It is well known that even aseptic ligatures of the common bile-duct open the way to the presence of organisms within the bile-ducts and we have very definite proof that a gall-stone in the common duct is very shortly followed by infective cholangitis which may in unfavourable circumstances become suppurative cholangitis and lead to abscesses in the liver or to other secondary troubles. But in 28·5 per cent. (Testut) of cases the common bile and pancreatic ducts open together into the ampulla of Vater which itself opens into the duodenum, and, according to Helly, in 62 per cent. of cases the common bile-duct is intimately embraced by the pancreas, so that when a gall-stone passes down the bile-duct it must of necessity in a large proportion of cases compress the pancreatic duct and cause a damming back of its secretion, which, arguing from analogy as well as from practical experience of the troubles that follow, means damming back an infected secretion. Thus it is brought about that in many cases of common-duct cholelithiasis, where the calculus reaches the pancreatic portion of the duct and remains there for some time, catarrhal inflammation of the pancreas occurs. If the stone passes after a short period the pancreatitis may subside and leave no trace, or the swelling of the pancreas may persist and for a time keep up pressure on the common bile-duct, leading to a persistence of the jaundice, though there is no concretion left to cause obstruction nor any evidence of disease of the liver beyond the jaundice due to the mechanical obstruction. Thus may be explained some of the cases of chronic jaundice with so-called chronic biliary catarrh, a number of which cases I have operated on and found the condition I have just related. If, however, the gall-stone obstruction persists for some time and the patient's health is feeble or becomes seriously deteriorated what was at first merely a simple catarrh may become a suppurative one, and as the same process involves the liver and the pancreas the ducts of both become filled with pus. We have now suppurative catarrh of the pancreatic ducts associated with a suppurative cholangitis, a very serious and generally a fatal condition, for which I have operated on four occasions. If the suppurative catarrh persists unrelieved it may lead not only to abscesses in the liver but also to abscesses in the pancreas and possibly, in case of survival, to subacute pancreatitis, as in the cases that I shall hope to describe under abscess of the pancreas. If the suppurative catarrh takes on an acute course the condition may become one allied to, and unrecognisable from, pyæmia, as in a case to be related later. If the infective catarrhal condition persists and does not assume the more dangerous suppurative form, or even if simple obstruction of the pancreatic duct persists from any cause with only mild infection, we may have an almost analogous condition to the one occurring in the liver that produces cirrhosis due to the development of fibrous tissue. In this more chronic form interstitial pancreatitis occurs which, I believe, in an early stage may be arrested by the removal of the cause, as I have proved in a number of cases that I hope to refer to under chronic pancreatitis.

The chronic pancreatitis at first assumes the interlobular variety and probably only much later, when it leads to true cirrhosis of the pancreas, does it take on the inter-

FIG. 8.

Diagram showing large diverticulum of Vater containing a calculus and illustrating one cause of hæmorrhagic pancreatitis. (Opie.)

acinar form and lead to alteration of the islands of Langerhans and thus to pancreatic diabetes. If a small gall-stone happens to descend into an unusually large diverticulum of Vater and to lodge there it will make a through channel from the common bile-duct, as shown in the diagram (Fig. 8), and this Opie has shown to be a cause of acute pancreatitis, the bile being forced direct into the pancreas. In one case under the care of Dr. Halstead this

[1] Lecture I. was published in THE LANCET of March 19th, p. 773.

condition occurred and acute hæmorrhagic pancreatitis ensued. Opie states that he has produced acute hæmorrhagic pancreatitis in dogs by injecting bile into the pancreatic duct. Other irritating substances, suspensions of bacteria, and various acids and alkalies have the same effect. It is quite clear, therefore, that gall-stones in the common duct are a frequent, in fact, by far the most frequent, cause of the various forms of pancreatitis, but the anatomical conditions just mentioned, though evidently potent, are certainly not necessary for the production of acute pancreatitis which may, as is well known, occur apart from cholelithiasis. Any gall-stone or stones impacted in the pancreatic portion of the duct, or even filling the ampulla of Vater, may be efficient causes of the trouble.

It may be asked, Why should not every case of common duct cholelithiasis be complicated by pancreatic inflammation? This is readily explained by the fact that in a certain percentage of cases the common bile-duct and the pancreatic duct open by separate orifices into the duodenum, while in another percentage the duct of Santorini is either the principal outlet for the pancreatic secretion or is of such a size that it can act as an efficient outlet even if Wirsung's duct becomes obstructed. The condition described by Opie, where the ampulla of Vater is very large and a small gall-stone becomes impacted at its orifice, is only rarely found, otherwise acute pancreatitis would be more common owing to overwhelming of the pancreatic ducts by infected bile. Besides gall-stones the other factors I have mentioned may lead to obstruction of the pancreatic ducts, to infection of the pent-up secretion, and to the different varieties of pancreatitis, the *rationale* of the process being similar to the one sketched above. It is possible that infection may extend upwards from the duodenum without preliminary obstruction, apparently by continuity of mucous membrane, catarrhal pancreatitis being then a sequel of gastro duodenal catarrh. In case of injury, in whatever way inflicted, it seems not unreasonable to think that the soft glandular substance will readily yield and so set free the auto-destructive secretion of the gland, which by dissolving the walls of the blood-vessels will lead to further hæmorrhage and then to the collection of a quantity of easily decomposable material that only needs infecting to become acutely dangerous. The contiguity of the stomach and intestines furnishes the possibility of infection, though if infection does not take place the injury may be repaired as in other organs. This probably explains acute pancreatitis supervening not immediately but some days after an injury.

Hæmorrhage into the pancreas, so-called apoplexy, arising from diseased vessels or in other ways by disrupting the gland, may lead in the same way to pancreatitis, but as we know that hæmorrhage occurs at times without exciting inflammation, as shown by old blood stains in the pancreas of some cases dying from other causes, it seems reasonable to argue that in such cases the exciting cause, infection, has been wanting. In general ailments, such as typhoid fever, influenza, &c., the well-known predilection of typhoid bacilli for the biliary passages would afford an easy explanation of their access to the pancreas and though it is difficult to prove I have in several cases of catarrhal inflammation of the pancreas obtained a history pointing strongly to influenza and to typhoid fever as the cause. In one case the relationship was proved by the discovery of typhoid organisms. As to mumps and pancreatitis there seems to be some peculiar and intimate relationship between the salivary glands of the mouth and the abdomen, and in the case of an adult friend, whose illness I had the opportunity some years ago of observing, it seems highly probable that a metastasis occurred about the third day of the disease when the pain and distress almost completely left the face and were followed by violent epigastric pain and alarming symptoms of depression, accompanied by sickness and fever, which then rapidly passed off after three days' anxiety and were followed by orchitis. M. Simonin[2] gave the result of his observations on 652 cases of mumps treated in the military hospital of Val de Grâce. In ten cases, or 1·3 per cent., there were symptoms of pancreatitis which occurred from the first to the twelfth day of the disease and lasted from two to seven days, the principal symptom being epigastric pain and tenderness, with sickness and vomiting. Among the blood infections have to be mentioned "pyæmia," which presents no special peculiarity in the pancreas, and "syphilis," which may affect the pancreas either as a tertiary affection in the shape of gumma or as a congenital affection as first described by Birch-Hirschfeld. It produces an interstitial pancreatitis of the interlobular type and the islands of Langerhans are unaffected. That the spread of ulceration inwards from the stomach may produce an indurative pancreatitis or even suppuration in the pancreas can be readily understood, for the ulcer must be constantly bathed with septic matter and the eroding action when once it has passed through the stomach wall may assume great activity.

The effect of the spread of ulceration is also well exemplified by the case (described later) of pancreatic abscess apparently due to gastric ulcer bursting into the stomach and setting up acute gastritis, for which I performed gastro-enterostomy with a good result. Whether alcohol can act directly in producing cirrhosis is, I think, a matter of great doubt, the probability being that it sets up a gastro-intestinal catarrh which by extension gives rise to the chronic infective process, or another explanation may be in the fact that alcohol causes vascular degeneration, a well-recognised cause of chronic interstitial pancreatitis. With regard to cirrhosis, the most chronic form of inflammation of the pancreas, which is though slow in its progress almost necessarily fatal from diabetes, the cause is probably a long-continued catarrh setting up interlobular and interacinar pancreatitis and which is originally due to infection. Vascular degeneration is ascribed as a cause in old or in prematurely aged persons.

[2] Bulletin de la Societe Medical des Hôpitaux, July 30th, 1903.

PANCREATITIS.

Historical references.—When studying the subject of pancreatitis in the light of modern pathological knowledge it behoves us to bear in mind that the older pathologists had noticed and described the naked eye appearances of nearly all the conditions that are engaging so much of our attention at the present time. Tulpius so far back as 1672 describes a diffuse pancreatic abscess of pyæmic origin and Matthew Baillie, physician to St. George's Hospital, in a work on "Morbid Anatomy," published in 1799, describes what he calls a hard pancreas with the lobules distinct, but which, I think, when I throw a photograph of his drawing on the screen, you will agree with me is what we now should call a case of chronic interstitial pancreatitis. He also figures in the same volume a case of pancreatic calculi most carefully dissected and showing the relation of the bile and pancreatic ducts as you will see by the next photograph. The work which Dr. Maynard Horne pointed out to me has been kindly lent by Dr. R. Salusbury Trevor and is on the table. The photographs have been kindly taken for me by Dr. P. J Cammidge. Portal in 1804 described a case of acute suppurative pancreatitis following on an attack of gout in the feet, and Percival in 1818 described a well-marked case of pancreatic abscess associated with jaundice. The following is a quotation from a paper by Dr. W. J. Mayo before the American Surgical Association, the executive committee of which approved of it for publication: "Balser in 1879 first described acute pancreatitis with fat necrosis. Little attention was attracted to the subject, however, and it was not until Fitz ten years later wrote his classical papers that the medical world really became aware of the inflammatory diseases of the pancreas. Fitz soon after pointed out the fact that many supposed cysts of the pancreas due to traumatism were really accumulations of fluid in the lesser cavity of the peritoneum and the omental bursæ. A proper understanding of chronic pancreatitis has been largely due to Robson who first noticed the disease in connexion with his operative work upon the biliary tract. In fact, the surgical study of the inflammatory diseases of the pancreas may be said to be the result of an inquiry into the causation of some of the complications of gall-stone disease."

Catarrh of the pancreas.—From the foregoing remarks on the etiology of inflammation of the pancreas it will be seen that I hold the view as to catarrh of the pancreas being a disease as well worthy of recognition as is catarrhal jaundice, which in the same way is dependent on catarrh of the bile ducts. It is held that biliary catarrh is known to exist as it can be so readily recognised by enlargement of the liver and jaundice, but that catarrhal pancreatitis is beyond recognition. I hope to be able to prove that these views regarding diagnosis will need revising, for catarrh of the pancreas can also be usually verified by digestive and metabolic signs and by swelling of the gland which can in some cases be recognised by palpation through the abdominal wall but in others only by manipulation of the pancreas through the opened abdomen. Just as catarrh of the bile-ducts may, and usually does, pass off if the cause be removed, so may

pancreatic catarrh entirely clear up under appropriate treatment. Should the cause continue the catarrh will become chronic and an interstitial pancreatitis ensue which may end in cirrhosis or atrophy of the gland—a condition which probably always has a fatal termination from diabetes.

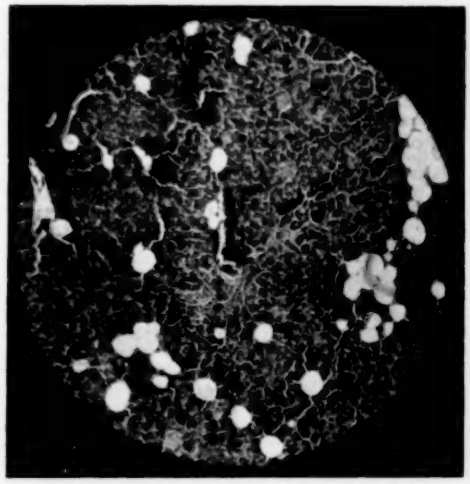
It will be seen that chronic interstitial pancreatitis is in many cases simply a sequence of pancreatic catarrh and as the latter is curable by appropriate treatment and the former when well advanced is only capable of relief and probably not of complete cure it is of the utmost importance that we should recognise catarrh of the pancreatic ducts at an early stage, and if in a short time it fails to yield to medical treatment that we should perform an exploratory operation with a view to remove the cause, whether that be gall-stones or some other removable condition; but if the cause be not discovered or if when found it proves to be incapable of removal then drainage of the bile-ducts, either by cholecystotomy or cholecystenterostomy will nearly always afford relief: (1) by removing the infected bile and thus ridding the system of poison which tends to deteriorate the blood; and (2) by removing the pressure of pent-up bile from the pancreas, thus relieving tension. Still another beneficial effect will result in some cases where the obstruction is at the papilla, for the pancreatic ducts will then also be drained indirectly through the bile-ducts. In certain cases of my own as well as in several occurring in the hands of other surgeons a mere manipulation of the gland without drainage has been followed by recovery and apparently by cure. An explanation of this result may possibly be that an obstruction in the shape of concretions or adhesions may have been inadvertently removed during the manipulation; but in one of my own cases thus treated glycosuria has subsequently developed, which possibly might have been prevented by drainage.

Just as post-mortem evidence is not easy to obtain in simple catarrh of the liver, so it is reasonable to anticipate that pathologists will rarely find gross lesions of the pancreas even if opportunity for a post-mortem examination occurs in the case of catarrhal pancreatitis. I am, however, able to show a micro-photograph of a case where death occurred in an aged patient 12 hours after operation apparently from a cerebral attack that came on during anæsthesia, where a gall-stone was impacted in the common duct and pressing on the pancreatic duct, the pancreas being found swollen at the time of operation. The presence of an inflammatory lesion of the pancreas was proved by a well-marked pancreatic urinary reaction before operation. At the necropsy no gross lesion of the pancreas could be seen, but I think it will be quite manifest to my audience that the photograph made for me by Dr. Cammidge and which I am able to demonstrate on the screen shows marked lesions in the shape of small-celled infiltration (Fig. 9), congested vessels, and incipient interstitial pancreatitis, and I suspect that careful investigation would demonstrate similar microscopic lesions in cases where no gross changes are manifest. I do not propose to occupy time in considering the symptomatology of acute and chronic catarrh of the pancreas, as the symptoms and signs, though less in degree, are practically the same as those of chronic pancreatitis, under which subject I shall consider the matter more fully.

Suppurative catarrh.—This disease bears the same relation to simple pancreatic catarrh that simple catarrhal jaundice does to suppurative cholangitis and, like the latter, it is an extremely serious and frequently a fatal disease. In all the cases which I have seen gall-stones have been the cause, but why some patients should have simple catarrh ending in chronic interstitial pancreatitis and others should at once develop an acute suppuration of the pancreatic duct I am unable to say, unless one may surmise that in the latter class the infection may be of a more virulent character and the patient's tissues less able to withstand the attack. The disease tends towards death from septicæmia or pyæmia, or if the process be less acute or the vital powers more resistant it may possibly end in a localised abscess. Suppurative catarrh of the pancreatic ducts is generally, if not always, combined with suppurative cholangitis. The following four cases that have come under my care illustrate the serious nature of the disease.

CASE 1.—The first case is an example of suppurative catarrh of the pancreatic ducts ending in abscess of the pancreas. It occurred in a man, aged 40 years, who had suffered from continuous fever with exacerbations associated with rigors that recurred almost daily. He gave the history of failing health for nine months and of having had gall-stone attacks much longer, but the acute symptoms associated with jaundice had only been present for a fortnight before I saw him. The pancreatic reaction was found in the urine. At the operation on Oct. 11th, 1900, he was far too ill to bear a prolonged search and as the adhesions were very firm I felt it desirable only to drain the bile ducts through the gall-bladder, though a marked swelling of the pancreas made it appear probable that an abscess might be present. A large quantity of muco-pus drained from the gall-bladder and a number of gall-stones were removed. The abscess of the pancreas discharged through the drainage-tube, after which the pancreatic swelling subsided. The patient made a slow though steady recovery and returned home early in December. Though he was able to get out and to take food he never fully regained his strength and died in February of the following year. At the necropsy the pancreas was found to be much enlarged and to be the seat of interstitial pancreatitis. The cavity where the abscess had been was occupied by a little pulpy material but no further collection of pus was found nor were any gall-stones discovered in the bile-ducts.

FIG. 9.



Catarrh of pancreas during incipient stage of interstitial pancreatitis.

CASE 2.—The second case was that of a woman, aged 61 years, suffering from suppurative cholangitis ending in abscess of the pancreas. She gave the history of having been subject to biliary colic for three or four years, though there had been no jaundice till two and a half years ago, since when the attacks of pain had always been accompanied by rigors and by deepening of the jaundice. Within a short time of my seeing her the symptoms had become aggravated and the loss of flesh had become extreme. The patient was so ill that the question of cancer of the pancreas was raised but the pancreatic reaction in the urine definitely pointed to inflammation and not to growth. At the operation I found the pancreatic portion of the common duct packed with large gall-stones and the head of the pancreas was markedly swollen. On passing the scoop through the opening in the common duct down to the pancreatic portion of the duct a stone of the size of a cherry was extracted, it being covered with offensive pus. This had apparently lodged in a cavity in the head of the pancreas. A profuse discharge of bile and offensive pancreatic fluid with pus continued to pass for a week, after which the discharge became gradually less. She made a good recovery and remains well a year later.

CASE 3.—The third case was one of suppurative cholangitis, pancreatitis, and parotitis with pyæmia in a woman, aged 65 years, the acute symptoms having come on within a fortnight, though there had been a history of gall-stones for years. The common duct was drained, gall-stones were removed, and a large quantity of extremely offensive pus and

bile was evacuated. At the same time the right parotid gland (the seat of inflammation) was incised. The bile was examined bacteriologically and found to contain the bacillus coli in large numbers; next in numbers were streptococci and another rather fine bacillus, which appeared to grow anærobically only, and there was a fine spore-bearing organism, probably the bacillus coli putrificus. The urine gave the pancreatic reaction. The patient, who also had heart disease and albuminuria, appeared to be doing well for 24 hours when she died suddenly, apparently from thrombosis.

CASE 4.—The fourth case was one of suppurative cholangitis and suppurative catarrh of the pancreatic ducts, due to gall-stones, in a man, aged 65 years, seen on Jan. 4th, 1904. He had had attacks of gall-stones seven years before and two seizures during the last two years, both of which were followed by jaundice. His present illness started on Nov. 23rd with severe pain followed by jaundice. On Dec. 20th a very severe attack of colic was followed by more intense jaundice and enlargement of the liver with irregular temperature. The patient had had albuminuria for seven or eight years. When I saw him there was tenderness above and to the right of the umbilicus and he had severe pain. A specimen of the urine was examined and found to give a marked pancreatic reaction (pointing to acute inflammation) and to contain calcium oxalate crystals. On opening the abdomen on Jan. 7th firm adhesions were encountered and on detaching the omentum phlegmonous cholecystitis was discovered with gangrene of the fundus of the gall-bladder; pus escaped freely but the peritoneum was saved from being soiled by means of sponge packing. The common duct was enormously dilated but no gall-stones could be felt. On opening the common duct a large quantity of pus and bile escaped. By means of the scoop passed into the common duct and the fingers passed behind the pancreas a number of gall-stones were extracted, but a hardness could be felt at the papilla which could not be removed. The duodenum was therefore opened and the papilla brought within view. On laying this open a gall-stone was removed from the ampulla of Vater and pus was immediately seen to flow from the duct of Wirsung. The duodenum was closed. The gangrenous upper part of the gall-bladder was removed and the common duct and gall-bladder were drained. The patient bore the operation well and from that time onward had no more fever, but for the fortnight during which he lived his temperature was persistently subnormal. He had no peritoneal symptoms and the bowels were moved freely from the second day onward. Calcium chloride had been given before operation and at the operation he lost no blood. None was given subsequently to operation and on the eighth day there was rather free oozing of blood from the drainage track which had to be treated by gauze packing, after which the chloride of calcium was renewed and no more bleeding occurred. On the eleventh day the patient became somnolent and declined to take food. From this time he got gradually weaker and died comatose on the fourteenth day in a condition almost resembling that associated with acute atrophy of the liver.

The preceding cases are most instructive in that they illustrate one of the dangers of cholelithiasis, which might be avoided by appropriate treatment at an earlier stage, for the removal of gall-stones before the onset of deep jaundice and infection of the bile and pancreatic ducts is with due care and in skilful hands almost devoid of danger. So far as I know, these conditions have not been hitherto described as separate and distinct diseases, but I think the reasons I have given and the cases I have related will show a justification for separating catarrhal inflammation from the phlegmonous inflammation I am about to describe. Simple catarrh of the pancreas can be treated most successfully, but, as will have been noticed, suppurative catarrhal pancreatitis is quite as serious as acute phlegmonous pancreatitis and unless treated surgically must, I think, be almost necessarily fatal.

ACUTE PANCREATITIS.

Symptoms.—Acute pancreatitis is usually ushered in by a sudden pain in the superior abdominal region, accompanied by faintness or collapse and followed sooner or later by vomiting. There is usually some epigastric swelling with tenderness from the first, and if the warm flat hand be placed over the epigastrium and retained there without movement for a time it will be found that the swelling is diffuse and not simply dependent on a distended stomach or colon though later, when peritonitis is established, the hollow viscera become inflated. It is almost constantly accompanied by constipation so that it is quite usual for these cases to be mistaken at first for intestinal obstruction. The obstruction, however, is not absolute, flatus passes, and a large enema may secure an evacuation; if the patient survives for several days diarrhœa may supervene. The pain may be so severe as to produce syncope or collapse and though the pain does not quite pass away it has a tendency to be paroxysmal and to be increased by movement; it is associated with well-marked tenderness just above the umbilicus and between it and the ensiform cartilage. The pain is soon followed by distension in the superior abdominal region which may become general, and usually does so in the later stages, and by vomiting, first of food, then of bile, and soon of black altered blood. The vomiting may be severe and each attack of sickness aggravates the pain. Rarely vomiting may not be a prominent symptom. Slight jaundice from associated catarrh of the bile-ducts and pressure is usually present and deepens the longer the patient survives. As the impaction of a gall-stone in the ampulla of Vater is probably the most frequent cause the jaundice may become intense from a complete stoppage of the passage of bile into the duodenum. The aspect is anxious and the face is pinched, resembling the facies of peritonitis which, in fact, is usually present. The pulse, which is rapid and small, is a better guide than the temperature which may be normal, subnormal, irregular, or high. In the ultra-acute cases the temperature is usually subnormal, but in the cases that survive for several days the temperature becomes irregular and may be excessive. Delirium comes on in the later stages. The distension and tenderness may prevent an exact examination of the pancreas which would otherwise be found enlarged. Death usually supervenes from the second to the fifth day from collapse, probably due to absorption of virulent matter, though in the less acute cases life may be more prolonged and recovery may possibly occur, as in one of my own cases related below, proved by laparotomy and the discovery of extensive fat necrosis, and by others reported elsewhere. Acute pancreatitis thus takes on the form of acute peritonitis starting in the superior abdominal region. If life be prolonged the condition may become one of subacute pancreatitis, the onset in such a case being usually less grave though often equally sudden. It is even possible for the trouble to resolve apparently completely and then for a relapse to occur, this sequence being repeated on several occasions.

The preceding description refers to acute pancreatitis generally and applies to the hæmorrhagic, gangrenous, or suppurative varieties which are phases of the same infective conditions though the morbid appearances differ so much. In gangrenous pancreatitis the organ is dry and dark or even black and there can be little doubt, as Opie has remarked, that this condition represents a late stage of the hæmorrhagic form. What has been previously said concerning pancreatic hæmorrhage will show that neither clinicians nor pathologists are agreed on this subject, some believing that inflammation precedes the hæmorrhage, among these being Fitz who designates the disease "hæmorrhagic pancreatitis," others holding that the hæmorrhage precedes inflammation which is, in fact, caused by bacterial infection of the hæmorrhagic effusion. Time will not permit of my pursuing the arguments employed in favour of each of these views but a careful study of the cases that I have seen and of all the cases reported inclines me to the opinion that both views may be correct in different cases, for although a primary pancreatitis may be accompanied by hæmorrhage yet this origin is not the only one and there are many cases in which hæmorrhage precedes and, in fact, is the cause of, inflammation; first, owing to the great tendency of the gland to disruption because of its soft structure when hæmorrhage does occur; secondly, owing to the setting free of the pancreatic secretion which decomposes and digests the damaged tissues; thirdly, owing to the communication of the gland with the intestine rendering the access of putrefactive organisms likely; and, fourthly, owing to the great tendency of the damaged gland and the effusion to become decomposed as soon as organisms gain access. From its proximity to the peritoneum acute peritonitis rapidly follows acute pancreatitis. I think that these two varieties of hæmorrhagic pancreatitis may at times be clinically differentiated, the ultra acute, with a violent and sudden onset, accompanied by collapse and ending fatally with extreme rapidity, being for the most part the ones where the hæmorrhage precedes the inflammation and the somewhat less though

still acute cases, where the onset is more gradual, where the symptoms are not ushered in by collapse, and where resolution and relapse are liable to occur, being the ones where the inflammation precedes the hæmorrhage. The varieties in which the inflammation precedes the hæmorrhage may in the severer forms approach to the ultra-acute or in the less severe examples approach the subacute varieties of pancreatitis. It seems to me that these views simplify the subject and place the disease of hæmorrhagic pancreatitis in a line with other well known inflammations. It would be quite easy, if time permitted, to give cases, both from my own experience and from the extensive literature of the subject, exemplifying every stage of the disease from the ultra-acute to the most chronic form. The drawing I now shew exemplifies a case of true hæmorrhagic pancreatitis where the inflammation was the cause of the hæmorrhage. It has been copied from Nothnagel and is taken from a case at the Harvard Medical School.

I will next show on the screen a well-marked example of hæmorrhagic pancreatitis from the Leeds Medical School (Fig. 10, marked 11 on the photograph) which occurred under the care of Mr. B. G. A. Moynihan and was dependent on gall-stones.

FIG. 10.

Hæmorrhagic pancreatitis due to gall-stones from a case in which the patient died shortly after operation. Fat necrosis is shown in the lower part. (Leeds Medical School Museum.)

A specimen next shown on the screen is from St. George's Hospital Museum, 204A, is a good example of hæmorrhagic or necrotising pancreatitis. The case was reported in THE LANCET of Oct. 19th, 1901, p. 1041 (Fig. 11, marked 12 on the photograph). [Two other specimens from the museums of St. Mary's Hospital and St. Bartholomew's Hospital respectively were shown.]

Diagnosis.—The diagnosis of acute pancreatitis is at first difficult as the symptoms are only characteristic of peritonitis starting in the upper part of the abdomen. Fitz's rule is worth bearing in mind: "Acute pancreatitis is to be suspected when a previously healthy person or sufferer from occasional attacks of indigestion is suddenly seized with violent pain in the epigastrium followed by vomiting and collapse and in the course of 24 hours by a circumscribed epigastric swelling, tympanitic or resistant, with slight rise of temperature." In case of laparotomy the presence of extensive fat necrosis is almost pathognomonic. At first the differential diagnosis must be made from intestinal obstruction, perforating duodenal or gastric ulcer, ruptured gall-bladder or bile-ducts, phlegmonous cholecystitis, and gangrenous appendicitis. In considering the difficulty of diagnosing between acute pancreatitis and intestinal obstruction it has to be borne in mind that the two may co-exist, as the swollen pancreas may embrace and strangle the duodenum or a collection of inflammatory material may seriously compress it. The swelling will, however, be usually less general in pancreatitis than in obstruction and, even if the bowels will not move, flatus can generally be passed. In case of doubt exploration may reveal fat necrosis. In perforation of a duodenal or gastric ulcer there will generally have been premonitory symptoms pointing to the disease before the perforation actually occurs and almost immediately an absence of liver dulness will usually be

FIG. 11.

Hæmorrhagic pancreatitis. Death second day after operation. No gall-stones were found. (St. George's Hospital.)

found. In acute ptomaine poisoning the history, the more general character of the pain, and the presence of diarrhœa will usually help the diagnosis.

In phlegmonous cholecystitis the symptoms are usually preceded by a swelling and well-marked tenderness beneath the right costal margin, at first distinctly localised and only later extending to the epigastrium and umbilical region, where the tenderness is generally found in acute pancreatitis; moreover, the history of gall-stones or typhoid fever will be elicited. In gangrenous appendicitis the tenderness below, and to the right of, the umbilicus and the swelling in that region usually remove the difficulty created by the pain in both appendicitis and pancreatitis being frequently felt at first just above the umbilicus. In acute pancreatitis the excruciating pain, at first epigastric but later general, the extremely rapid loss of weight and the irregular tenderness opposite to, and above, the umbilicus are usually characteristic. Halstead [3] lays stress on two symptoms—the excessive pain and cyanosis of the face and of the abdominal wall. The former symptom is universal but the latter is not always present in my experience. The urinary test for the pancreatic crystals should not be neglected as a positive reaction has been obtained in all the cases of acute pancreatitis in which it has been employed. Glycosuria is usually absent but in two out of 41 cases of hæmorrhagic and in three out of 40 cases of gangrenous pancreatitis Korte found it present.

Treatment.—The pain at the onset is so acute as to necessitate the administration of morphine and the collapse will probably demand stimulants which on account of the associated vomiting may have to be given by enema. In the early stages the symptoms may be so indefinite that the indications for surgical treatment are often not clear enough to warrant operation, but as soon as acute pancreatitis is proved, as it may be by the combination of symptoms together with the urinary test, the surgeon must not wait until the collapse has passed off as that may be dependent on septic absorption which can only be relieved by operation. The simulation of intestinal obstruction will probably lead to efforts to secure an evacuation of the bowels and relief to the distension. Just as in perforative or gangrenous appendicitis an early evacuation of the septic matter is necessary

[3] Johns Hopkins Hospital Bulletin, 1901, Nos. 121, 122, and 123.

to recovery, so in this equally lethal affection an early exploration from the front through the middle line above the umbilicus or from behind through the left costo-vertebral angle is indicated in order, if possible, to relieve tension, to evacuate septic material, to secure free drainage, and to arrest the hæmorrhage which leads to disintegration and necrosis of the pancreas. The after-treatment will be chiefly directed to combating shock and keeping up the strength until the *materies morbi*, both local and general, can be thrown off. Even if no pus be found no harm should accrue by such an exploration which can be made in a few minutes through a very small incision in the middle line above the umbilicus, if necessary with the aid of cocaine. After establishing the diagnosis by the discovery of fat necrosis a posterior incision in the left costo-vertebral angle will enable the diseased organ to be very freely examined and if necessary drained for the evacuation of pus and gangrenous material without risk to the general peritoneal cavity and with little danger of retained septic matter, as the drainage will be a dependent one. If, however, the inflammatory collection or the tensely distended and inflamed gland be incised from the front, as is advisable in certain cases, gauze packing and gauze drainage may usually be relied on to prevent general infection of the peritoneum. If there are signs of obstructed common duct the gall-bladder should be drained and if gall-stones be discovered they should be removed if this can be done without seriously adding to the length of the operation or imperilling life by adding to the shock, otherwise they may be left and removed on a subsequent occasion if free drainage of the bile passages can be secured. I have had six cases of acute pancreatitis under my care and have operated on four, of which two recovered. Of the two cases where operation was not consented to and where medical treatment alone was carried out death occurred in the first case on the third day and in the second case after a week's illness, attended in both with great pain and incessant vomiting.

In a case of gangrenous pancreatitis in a man, aged 58 years, I was able to open a collection of fluid through the great omentum above the hepatic flexure of the colon and to extract a slough of the pancreas, afterwards draining freely. At the same time I drained the gall-bladder and removed all the stones that I could reach, but I did not venture to open the common duct as the patient was too ill to bear a prolongation of the operation. Fortunately, several small calculi worked back through the tube in the gall-bladder and recovery was not delayed and was ultimately complete. The pancreatic reaction was well marked in this case.

In another case of a young married woman suffering from acute suppurative pancreatitis the viscera were found hopelessly matted together. There was extensive fat necrosis all over the abdomen. I evacuated a subphrenic abscess containing masses of necrosed fat and dark pus. The patient was only temporarily relieved and succumbed on the third day. In this case I think I ought to have drained through the costo-spinal angle on the left side as well as from the front, but the patient was so ill that I feared to do more lest death should occur on the table.

In a case of traumatic hæmorrhagic pancreatitis in a man, aged 28 years, on whom I operated, drainage through the loin as well as in front was adopted but did not save life, as at the time of operation peritonitis was already advanced.

In another case of a middle-aged medical man, whom I saw with Dr. H. P. Hawkins, the diffuse fat necrosis and adhesions of the viscera and omentum into a dense mass presented a formidable obstacle to complete exploration, but as no evidence of any collection of fluid either in the pancreas or in the lesser peritoneal sac could be obtained and as no gall-stones could be felt either in the gall-bladder or bile-ducts, I simply performed the peritoneal toilet and closed the abdomen, recovery following and ending in complete restoration to health. It is worthy of note that in this case the diagnosis was confirmed before operation by the urinary pancreatic reaction.

A case was reported [4] by Dr. Charles D. Muspratt, of a woman, aged 40 years, who had been admitted to the Royal Victoria Hospital, Bournemouth, on Dec. 3rd, 1903, in a state of collapse and suffering from severe abdominal pain with incessant vomiting. The abdomen was opened within 24 hours of the onset of acute symptoms and the omentum and intestines in the neighbourhood of the pancreas were found deeply blood-stained with numerous spots of fat necrosis. The pancreas was almost purple and extremely tense. An incision was made into the dark gland and very free bleeding followed which was arrested by ligature. Gauze drainage was employed and complete recovery followed. This is apparently the first case in which direct incision of the pancreas has been adopted and the operator is to be congratulated not only on having the strength of his convictions in treating acute hæmorrhagic pancreatitis on the lines of other phlegmonous inflammations but on the success of such treatment. In a case reported by von Mikulicz in 1903 a patient, under the care of Dr. C. B. Porter of Boston, was operated on by a deep incision into the inflamed gland with an excellent result. This is apparently the second case in which the pancreas was deliberately incised during acute inflammation with a successful result. Woolsey [5] gives a summary of three cases of this affection successfully dealt with by laparotomy and drainage. The first two cases were operated on in the early stage—the first on the third day and the second twelve hours after the onset. The first case was a hæmorrhagic one and showed fat necrosis, the second case showed no fat necrosis or bloody fluid, but the latter appeared on the removal of the gauze drain two days after the operation. In the third case there was marked but temporary glycosuria. Dr. C. G. B. Kempe of Salisbury on Dec. 11th, 1902, excised a portion of the head of the pancreas affected with acute hæmorrhagic pancreatitis. It was done within two hours of the onset of hæmorrhage. The patient unfortunately died from diarrhœa 15 days later. The argument that the percentage of mortality will be less if the surgeon waits for the formation of a local abscess is fallacious, as it takes no consideration of the large percentage of those who die before such a favourable result is presented, and in the second place many patients never develop a local abscess, the process being diffuse from the onset. The high mortality of an early operation in acute cases is due to the fact that in many of these fatal instances intestinal obstruction was suspected and the collapsed patients were subjected to a prolonged search for the seat of the supposed lesion. Of 59 reported cases of operation during the acute stage 23 recovered; these include my own cases and those just referred to. Although this is a large mortality it must be borne in mind that the disease is a lethal one and usually ends in death if not treated surgically. The lessons which one may learn from recorded cases are not to wait until the system is over-weighted with absorbed poison before operating and not to spend too long a time over the operation.

Subacute pancreatitis.—Although no hard-and-fast line can be drawn between acute and subacute pancreatitis, yet the less acute onset, the longer course, the limitation of the suppurative process by lymph barriers, and the much more hopeful outlook as the result of treatment present so many differences that I think clinical observers will see that such a division is desirable both from the point of view of diagnosis and treatment. Acute pancreatitis seems to me to bear the same relation to subacute pancreatitis that a diffuse mastitis does to a simple abscess of the breast or a diffuse suppurative parotitis to a simple parotid abscess. It may have a more or less sudden onset with acute pain and vomiting and may be associated with constipation, but collapse is not a marked symptom and is, as a rule, absent. The upper abdominal region does not become so rapidly distended and vomiting is less severe and less prolonged. At other times, and this is generally the case, the onset is more gradual though the symptoms may be similar. As gall-stones are the usual cause of this form of pancreatitis, a history of intermittent attacks of spasms, at first without and later accompanied by jaundice, will be elicited and before the onset of pancreatic trouble the symptoms of infective cholangitis, in the shape of rigors with deepening of jaundice and with intermittent fever, will generally be found. Tenderness over the pancreas is well marked and on account of the tympanites being less than in the acute form it may be possible to feel the swollen gland, especially under an anæsthetic, and as the case progresses a definite tumour often develops. Constipation gives place to diarrhœa, and pus or blood may be noticed in the stools which have a very fœtid odour and usually contain fat and undigested muscle fibres. The pulse is not so seriously affected as in the acute form and the temperature is more irregular. I have seen the temperature reaching to 104° and 105° F. and yet the pulse to vary

[4] Brit. Med. Jour. Feb. 5th, 1904, p. 304.

[5] Annals of Surgery, November, 1903.

between 90 and 110. The morning temperature may be normal and the evening temperature high for several days or even weeks. Rigors or chills usually occur and may be repeated from time to time. The pain occurs in paroxysms but there is also a constant dull pain at the epigastrium. The patient may lose the more urgent symptoms and appear to be really improving, but the loss of flesh and feebleness continue and relapses usually occur leaving the patient each time more and more feeble until death supervenes from asthenia. Albuminuria is pretty constant, but glycosuria is rarely present. The pancreatic reaction in the urine is as a rule well marked. If an abscess develop the pus may form a tumour projecting in the superior abdominal region and forming a tender swelling behind the stomach, or perhaps coming to the surface above or below that viscus; or it may burrow into either loin, forming a perirenal abscess, or passing under the diaphragm it may form a subphrenic abscess. Occasionally the pus may follow the psoas muscle and form a subperitoneal abscess in the iliac region, or even passing over the brim of the pelvis it may collect in the left broad ligament. I have seen most of these terminations in cases either under my own care or under the care of others and I have operated seven times for abscess of the pancreas. Sometimes the abscess bursts into the stomach and is vomited, or into the bowel and is voided per anum, after which diarrhœa may continue and pus may be seen from time to time as any fresh collection forms and bursts. I have seen both of these methods of spontaneous evacuation of a pancreatic abscess. With the evacuation of the abscess relief occurs for a time and the temperature improves but relapses usually take place and a mild form of septicæmia persists with a hectic temperature. Death is the usual termination unless an operation be done, though spontaneous recovery may possibly occur after a tedious and prolonged illness should the abscess burst into the bowel or be otherwise safely evacuated.

For the diagnosis of subacute pancreatitis in its initial stages I need add little to what I have said when considering suppurative catarrh and acute phlegmonous pancreatitis. The presence of a tumour or of a diffuse epigastric swelling behind the stomach will be generally found, or if epigastric tenderness prevents palpation an anæsthetic will enable the swelling to be felt. There is usually fever of a septic type. The presence of leucocytosis and the discovery of the pancreatic reaction in the urine will afford valuable aids to diagnosis. As soon as an abscess forms it may reach the surface above or below the stomach, in either loin, in the left iliac region, under the diaphragm, or even in the pelvis, and will require differential diagnosis from other conditions leading to a collection of pus in those situations, such as chronic perforative gastric ulcer, suppurative cholecystitis, splenic abscess, perirenal abscess, spinal abscess, glandular abscess, &c.

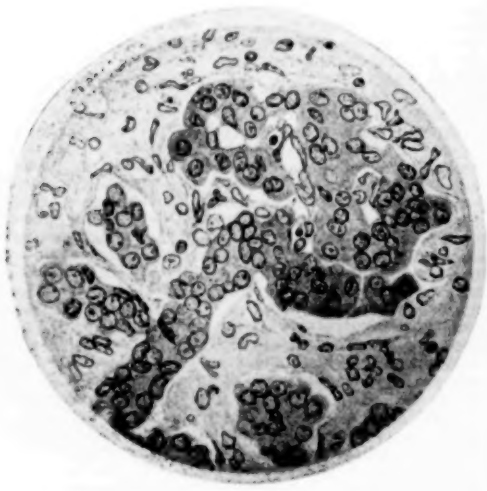
Treatment.—The subacute form of pancreatitis is more amenable to treatment, as the indications are so much more definite and there is more time for careful consideration. Though it has usually only been attacked when an abscess has formed and is manifestly making its way to the surface, yet there is no reason why in some cases surgical treatment should not be adopted at an earlier stage. As in the acute condition morphine may be required to relieve the pain and to lessen the collapse. Distension, if present, demands attention and may have to be relieved by lavage of the stomach and turpentine enemata or by the administration of calomel by the mouth. Calomel is also of benefit as an intestinal antiseptic, for which purpose it may be given in small repeated doses followed by a saline aperient. As soon as the constipation is relieved diarrhœa is apt to supervene, when salol and bismuth, with small doses of opium, may be given. If surgical treatment is decided on a median incision above the umbilicus will enable the operator to palpate the pancreas and to locate any incipient collection of pus which, if practicable, should then be evacuated by a posterior incision in the left or right costo-vertebral angle. If the posterior incision be thought impracticable the collection of pus may be removed by aspiration and the cavity opened and packed with gauze which may be brought forwards through a large rubber tube, which procedure will in the course of from 24 to 48 hours establish a track isolated from the general peritoneal cavity. In abscess of the pancreas, which usually assumes the form of subacute pancreatitis and which we must distinguish from the acute suppurative pancreatitis where the pus is diffused through the gland or where the abscesses are small and multiple, the suppurating process is limited by a pouring out of lymph, so that should the patient survive the initial more acute stage and discovery of the pus-containing cavity be made the condition is one decidedly amenable to treatment by drainage. The anatomical relation will readily explain the course along which the pus burrows should it burst through its lymph barriers—for instance, in one case I was able to evacuate an abscess from the right loin in a young man, aged 24 years, that had been mistaken for a perirenal abscess, yet the kidney was quite healthy and the grumous pus had come from the pancreas and passed behind the peritoneum covering the second part of the duodenum. The patient recovered completely. In another case I opened an abscess in the left iliac region that had apparently started from the body of the pancreas and which had burrowed in the same way behind the peritoneum. The patient recovered from the operation but developed trouble in the left side of the thorax and died suddenly several weeks later. In one case that I mentioned under acute suppurative pancreatitis the abscess was subphrenic. In one case where the symptoms were rather acute and the patient was extremely ill I discovered pus between the liver and the stomach, and although drainage was apparently complete the patient succumbed in a few days to exhaustion due to the septic process that had been initiated before the abscess was opened. In two other cases, the sequence of suppurative catarrh, I have successfully drained abscesses of the pancreas through a tube in the common bile-duct after removing the gall stones which had obstructed Wirsung's duct. In one of these cases the patient, a woman, aged 72 years, remains quite well, and in the other a man, aged 40 years, recovered from the operation but three months afterwards died from exhaustion and at the necropsy the empty abscess cavity was discovered in the head of the pancreas, the rest of the gland being affected with chronic interstitial inflammation. In one of my cases, in a man, aged 35 years, a pancreatic abscess burst into the stomach, setting up acute gastritis, the condition being proved by an exploratory operation. It was treated by gastro-enterostomy to drain away the foul stomach contents. The patient is now quite well, four years later. In another case, in a young married woman, aged 26 years, the abscess apparently burst into the bowel and though recovery was tardy she ultimately got quite well without operation. The diagnosis was made from the symptoms and by an examination of the swollen pancreas under an anæsthetic and subsequently by the presence of a pancreatic reaction in the urine. It is important in these cases to see that the cause is removed, if that be possible—for instance, gall-stones or pancreatic calculi—so that if recovery occurs there may be nothing left to lead to a recurrence of the trouble.

It will thus be seen that I have had eight cases of abscess of the pancreas under my care, one of which was mentioned under acute pancreatitis. Six were operated on, with recovery from operation in five, though in one of the cases the relief was only for a few weeks and in another for a few months. In the eighth case, which was not operated on, the abscess burst into the bowel and was discharged, the diagnosis having been made by an examination of the tumour under an anæsthetic and by the presence of the pancreatic reaction. When inflammation of the pancreas has ended in abscess chronic interstitial pancreatitis will also probably be present, as was shown at the necropsy of one of my cases that died some months subsequently. It is possible that in some cases the interstitial change may be local, though I suspect in others it will be general and may then lead to atrophy of the gland and to glycosuria. A search through literature reveals a considerable number of pyæmic abscesses of the pancreas but those resulting from subacute pancreatitis are not common. Besides my own seven operations for abscess of the pancreas with two deaths, there have been seven others recorded with three deaths. Thus of 14 cases five died, giving a mortality of 35·6 per cent.

Chronic pancreatitis.—By chronic pancreatitis is understood an interstitial change in the pancreas of an inflammatory character leading to the formation of fibrous tissue. It may be *interlobular*, in which case it exerts pressure on, and causes atrophy of, the true glandular substance of the pancreas and interferes with its digestive function, or *interacinar*, in which case the fibrous tissue invades also the islands of Langerhans and leads, not only to an interference with the digestive, but also with the metabolic, functions of the gland and so to glycosuria. In cystic disease of the pancreas some interstitial pancreatitis is usually present

and in many cases the chronic inflammatory process is the true cause of cyst formation. In an advanced condition the gland may be atrophied, small, and cirrhotic, almost like true cirrhosis of the liver, as in the specimen shown on the screen from St. Bartholomew's Hospital Museum. Chronic interstitial pancreatitis may be *primary*, as in those cases recovering from the acute or subacute forms of pancreatitis or from acute or chronic or suppurative catarrh, or it may be *secondary*, as in syphilis (Fig. 12), alcoholism,

FIG. 12.



Chronic interstitial pancreatitis from a case of congenital syphilis, showing islands of Langerhans free from disease (Opie).

and arterial degeneration, and in the zymotic diseases, such as typhoid fever and influenza. The inflammatory process, which is in the primary forms essentially due to a mild form of infection, may be *general* throughout the gland or *limited* to certain portions, especially the head. The most frequent cause of chronic interstitial pancreatitis is cholelithiasis which causes obstruction to the pancreatic ducts and thus leads to an infective process which extends to the parenchyma; but anything causing duct obstruction, such as pancreatic calculi, stenosis from ulceration or growth, may act in the same way. It may also follow catarrh extending upward from a duodenal catarrh or from a cholangitis, or it may be due to the extension of an inflammatory process from the stomach, as in chronic ulcer eroding, or an acute ulcer perforating into, the pancreas. When our only source of information was the dead-house it was natural that only the more advanced conditions should be recognised and it is not surprising that the slighter changes in the gland were regularly passed over by pathologists, as indeed without great care they may be still, for it is to be borne in mind that in the primary stages of a catarrhal inflammation the swelling, which depends on an increased supply of blood to the part and on engorgement of the excretory ducts and which may be readily felt and recognised by the operating surgeon, may after death almost entirely disappear, so that the pathologist may be unable to recognise any lesion except by microscopical examination, and even the microscope may in the early stages only show an excess of leucocytes in the tissues. Hence chronic pancreatitis was until recently only recognised when extreme and was looked on as a mere pathological refinement of no practical importance except in certain cases of congenital syphilis and alcoholism.

The surgeon has considerable advantages over the pathologist in cases like those under consideration, for he has the opportunity of examining and handling the living pancreas and after some experience he can tell the difference between the feel of the normal and the diseased gland, as well as between chronic pancreatitis and cancer. In interstitial pancreatitis the pancreas is uniformly swollen and harder than usual and the lobules have the feeling of being mapped out and differentiated in a manner very different from their state in the ordinary healthy gland and also very different from the hard, nodular character presented by cancer of the head or body of the pancreas.

In July, 1900, in a lecture delivered in London, I had the privilege of pointing out the frequency with which an inflammatory enlargement of the pancreas accompanies gall-stone trouble, especially common-duct cholelithiasis, and which may not only persist after the original cause has passed away, but may simulate cancer of the head of the pancreas and terminate fatally under this supposition, when by efficient surgical treatment great relief, or even possibly cure, might have been effected. My attention was forcibly drawn to the association of gall-stones with inflammatory swelling of the pancreas by the frequency with which I found enlargement of the head of the pancreas and sometimes of the whole gland when operating for gall-stones. The symptoms of pancreatic catarrh passing on to interstitial pancreatitis present great varieties according to the cause; for instance, if it be due to gall-stones there will be a history of painful attacks in the right hypochondrium associated with jaundice and possibly accompanied by fever of an intermittent type. Tenderness at the epigastrium with some fulness above the umbilicus will usually be noticed; loss of flesh soon becomes marked and if the pancreatic symptoms predominate the pain will pass from the epigastrium round the left side or even to the renal and scapular regions. Fat and muscle fibres may be noticed in the motions as soon as the obstruction to Wirsung's duct is complete and the pancreatic reaction will be found in the urine. If gall-stones be not the cause there may be merely an aching or painful attacks not at all pronounced, or the symptoms may come on painlessly, associated with dyspepsia and with slight jaundice soon becoming more marked; in such cases the gall-bladder may dilate and give rise to a suspicion of cancer of the pancreas which the rapid loss of flesh will tend to confirm. In the later stages pale or white and bulky motions may be passed and a hæmorrhagic tendency will be noticed. The liver is usually enlarged when the common bile-duct is tightly gripped and in several cases I have found cirrhosis of the liver, doubtless due to long-continued stagnation of septic bile in the ducts. I have seen well-marked enlargement of the spleen on four occasions. In one patient the fever and the enlarged spleen gave rise to a suspicion of ague, the organisms of which were said to have been found in the blood. An examination of the urine in all my cases gave the characteristic pancreatic reaction. In 60 per cent. bile was present in the urine. In 40 per cent. calcium oxalate crystals were found. In 4 per cent. only the oxalate crystals were associated with bile. In none of my cases was glycosuria found, though in two cases it developed several years later. Opie reports having found glycosuria in one out of 22 cases. Glycosuria only occurs as a very late symptom. Death may occur from asthenia due to long continued jaundice or from diabetes or from hæmorrhage. The following is a brief description of some of the earliest cases on which I operated.

The first case was in a woman, aged 44 years, who had for some time been suffering from deep jaundice with considerable pain, some irregular fever, digestive disturbance, and emaciation. At the operation on June 22nd, 1890, after separating a number of adhesions, I found a tumour of the pancreas embracing the lower end of the common duct, which at the time I thought to be malignant. The tumour was freely manipulated in order to ascertain if any gall-stones were present in the common duct, but none could be felt, and as the gall-bladder was contracted and there was some tendency to hæmorrhage from numerous small points I did not proceed further and the abdomen was closed. Whether any concretion was pressed onward into the duodenum I cannot say but the patient made a good recovery from the operation and within a few months had regained her health. A letter received this year from her medical man states that she is now, 14 years afterwards, in very good health.

The second instance of the kind was in a case on which I operated on Feb. 17th, 1891. The patient, a man, aged 50 years, was deeply jaundiced and supposed to be suffering from a gall-stone in the common duct, but on exploration no biliary concretion could be felt, though a swelling of the head of the pancreas was found. The patient recovered after a simple cholecystotomy and regained his health, but I have not been able to trace his subsequent history.

The third case occurred in April, 1892, also in a man, aged

32 years, who was extremely ill and emaciated at the time and suffering from deep jaundice and great prostration, with dilatation of the gall-bladder. Operation was undertaken too late and death resulted from shock and exhaustion on the second day. A necropsy revealed a cirrhotic condition of the head of the pancreas compressing the common bile-duct, there being no evidence of malignant disease.

The fourth case was in a woman, aged 51 years, who had chronic jaundice and irregular fever associated with spasmodic pains and great loss of flesh. Operation was performed on July 15th, 1895, when gall-stones were crushed and removed from the common duct, and a hard swelling of the head of the pancreas was felt which was thought to be cancer. The gall bladder was connected to the duodenum to establish permanent drainage. The patient recovered and was in excellent health three years later.

The fifth case was a man, aged 56 years, who had had irregular pain and jaundice for a year with intensification of jaundice and fever after each attack of pain. The gall-bladder was distended. Operation was performed on August 27th, 1895. No gall-stones were found but three ounces of fluid tinged with blood were removed from the gall-bladder. A hard swelling of the pancreas was discovered. Cholecystenterostomy was performed. A report was received two years later to say that the patient had gained weight after the operation and had been at his work ever since, though he had had occasional attacks of pain followed by slight jaundice.

The sixth case was in a man, aged 37 years, who had been operated on in another hospital for persistent jaundice. No gall-stones were found but a tumour of the head of the pancreas was felt and the case was thought to be one of cancer of the pancreas. A biliary fistula had persisted and though the patient was freed from the jaundice he remained feeble and thin. I performed cholecystenterostomy on July 13th, 1896. The patient made a good recovery and gained flesh and strength. A year later he was well.

The seventh case was a man, aged 34 years, seen in 1897. He had had painful attacks resembling cholelithiasis since June of 1896 and deep jaundice since December. The gall-bladder was distended and easily palpated. The patient was extremely ill and emaciated. At the operation on Feb. 25th, 1897, the gall-bladder was found to be dilated and surrounded by numerous adhesions but no gall-stones could be felt. Cholecystenterostomy was performed. The patient made a good recovery and rapidly lost his jaundice. Mr. H. L. Dowsing of Hull was kind enough to write on Jan. 24th, 1904, to tell me that the patient is now in good health and has never had a day's illness since his return home, the operation having taken place seven years ago.

The eighth case was in a woman, aged 49 years, who had had gall-stones removed from the gall-bladder three years before in Canada. She had never been free from jaundice since the operation and was subject to frequent vomiting. She was much emaciated, the stomach was dilated, and there was marked tenderness over the gall-bladder region. At the operation very extensive adhesions were found and the pancreas was much enlarged. Cholecystenterostomy was performed, after which she gradually regained her health. Dr. T. Kilner Clarke was kind enough to send me word on Jan. 24th, 1904, that the operation had been a complete success and the patient was leading an active life and was well six years after operation.

The ninth case, that of a man, aged 45 years, was reported fully in the lecture that I gave before the London Polyclinic in June, 1900. I had a letter from Mr. G. V. A. Robertson of Pickering on Jan. 25th, 1904, to say that the patient was in excellent health.

The tenth case was fully reported in THE LANCET of July 28th, 1900, p. 235. It occurred in a man, aged 42 years. In this case free manipulation of the pancreas only was performed and the gall-bladder although distended was not drained. This may have had something to do with the subsequent course of events. The jaundice persisted in a slighter degree for some length of time and although the patient is apparently well more than five years after the operation, yet he has developed glycosuria and the pancreatic reaction in the urine can also be obtained at the present time, thus pointing to the persistence of chronic interstitial pancreatitis which has invaded the islands of Langerhans. The presence of oxalates in the urine is also suggestive, though it contains no bile and no albumin. Had I drained the gall-bladder in this case I think it is highly probable that the sequelæ I have mentioned might have been prevented.

It would be easy to give further examples, for every one of the cases on which I have operated presents certain points of interest, but time will not permit this. When giving my lecture before the London Polyclinic I gave full details of several cases which can be found in THE LANCET of July 28th, 1900, p. 235. The diagnosis in the first series of cases was made from the course of events after operations at which a tumour of the pancreas was discovered and thought to be malignant and in which the patients regained health and remained well years subsequently, thus proving that the disease was not cancer, and by one case operated on in April, 1892, which came to post-mortem examination, in which the development of fibrous tissue in the head of the pancreas compressing the bile-duct was capable of demonstration. In the later cases other means of diagnosis in the shape of great emaciation and alteration in the stools, the result of imperfect digestion, excited more attention, but the most important diagnostic means was the discovery of the pancreatic reaction in the urine, by means of which we can usually say whether or not the pancreas is participating in the disease and also whether the affection be dependent on simple inflammation or on cancer. This test will, I hope, save many useless operations, for if it can be made to prove the presence of malignant disease of the pancreas along with jaundice operative treatment should then be avoided as being not only extremely dangerous but practically useless, even if the patient recovers from the operation. At times the test has forced one's hand with regard to operation, as when other symptoms and signs pointed to malignant disease, and operation had been pronounced undesirable, the urinary test has demonstrated on several occasions that what one thought might be cancer of the pancreas was either not dependent on disease of the pancreas and therefore possibly due to gall-stone alone, or that it was due to inflammatory and not to malignant disease of the pancreas, the result being that while in certain cases undesirable operations have been avoided, in others operation has been shown to be desirable and necessary to the cure of the patient. Although gall-stones in the common duct are often the cause of catarrhal or other inflammatory trouble in the pancreas, it does not follow that the sequence always occurs. For instance, if the gall-stone be too large to pass into the lower end of the duct jaundice will be unaccompanied by pancreatic disease, as in a case on which I operated recently where a gall-stone of the size of a small walnut was present in the supra-duodenal portion of the common bile duct and the pancreas was quite normal to sight and to touch; moreover, in this case the urine gave no pancreatic reaction. It will also be unlikely to occur—(1) if the duct of Santorini freely communicates with Wirsung's duct and is able at the same time to discharge the secretion of the pancreas freely into the duodenum; (2) if the duct of Wirsung and the common bile-duct open by separate orifices and the ampulla of Vater be absent; and (3) if a gall-stone should pass rapidly into the bowel so that the obstruction is only of short duration.

The treatment of catarrhal inflammation of the pancreas and of chronic interstitial pancreatitis will at first be by general and medical means aiming at the cause, whether that be gall-stones, pancreatic calculi, duodenal catarrh, gastric ulcer, alcoholism, or syphilis; but if after a fair trial of medical treatment, not too long continued, the jaundice and loss of weight continue, and the signs of failure in pancreatic digestion and metabolism are manifesting themselves, the question of surgical treatment should be seriously considered, for the condition is one that if not relieved early will certainly lead to serious degeneration of the gland. When operation is undertaken before the process has advanced to well-marked pancreatitis or to the interacinar form, my experience is that complete cure is effected in a very great proportion of cases, but if interstitial inflammation has become well marked an arrest of the process is all that can be looked for. As proof of this statement, in some cases, apparently well several years after operation, a pancreatic reaction can be obtained in the urine, while in two cases glycosuria has developed, thus showing that inflammation of the pancreas if at all advanced leaves abiding changes, and the sooner the morbid process is checked the less likelihood will there be of a permanently deficient metabolism. Surgical treatment will vary according to the cause and the symptoms. Where there is evidence of obstruction, whether in the pancreatic or common bile-ducts, the cause in the greater number of cases, 27 as compared with 24, will prove to be concretions

which should if possible be removed and, as proved by my experience in this class of cases, the hope of relief is very promising.

Not only is it desirable to remove the cause of obstruction but at the same time the bile-ducts should be drained either by means of cholecystotomy or cholecystenterostomy. Where no obstruction in the shape of gall-stones or pancreatic calculi can be found I would still advise drainage of the bile-ducts by one of these operations. It has been argued that it is difficult to comprehend how drainage can do good in these cases; for proof of its efficacy I would appeal to the list of examples that I have given and to the after-history of the cases which I have operated on. The drainage of the bile ducts acts, not only by removing one source of irritation in the shape of infected bile, but at the same time it relieves tension and allows the infected pancreatic secretion to escape, besides also freeing the blood from a poison which seriously damages it and the system at large. Besides the beneficial effects of drainage, in many of the cases the cause of obstruction is also removed. Whether advanced chronic interstitial pancreatitis will be completely cured by operation it is difficult to say, for in some of the severer cases a pancreatic reaction is found long after operation and after all other symptoms have cleared up, but in several cases that have been tested years after operation the pancreatic reaction has entirely disappeared, thus apparently proving that the case is cured. Moreover, I suspect that the operation arrests the process of disorganisation even if it cannot alter changes that have already occurred. Doubtless in some the disease was a catarrhal inflammation of the pancreas which was arrested either before interstitial inflammation had actually developed or before it had advanced too far, and probably in none of the cases had the interstitial change advanced so far as to become interacinar or to present the advanced stage of atrophy or cirrhosis, as in none of the cases was sugar present in the urine at the time of operation, though the metabolic functions of the pancreas were impaired as shown by the presence of the pancreatic reaction, and the digestive functions were affected as shown by the condition of the fæces.

STATISTICS OF OPERATION FOR CHRONIC PANCREATITIS.

In order to ascertain the after-results of the operations letters were recently addressed to the friends or medical attendants of all the patients who had not been recently heard of. In one case where the cause was due to pancreatic calculi these were removed both from Wirsung's and Santorini's ducts with complete recovery and the patient is now well. In 27 cases of catarrhal or interstitial pancreatitis, where gall-stones were found obstructing the pancreatic portion of the common duct, choledochotomy in 19, cholecystotomy in five, and cholecystenterostomy in three were followed not only by immediate recovery but, as ascertained by recent reports, the patients are now well, except one who has since died from acute bronchitis, one who is suffering from cirrhosis of the liver, and one who eight and a half years subsequently to operation is apparently well though sugar has recently been found in the urine. In 24 cases, where obstruction to the common bile-duct was due to an inflammatory condition of the pancreas compressing the bile-duct, though probably in many of the cases originally due to gall-stones yet where gall-stones were not actually present at the time of operation, the bile-ducts, and thus indirectly the pancreatic ducts, were drained, in 12 cases by simple cholecystotomy and in nine by cholecystenterostomy; in three cases adhesions were separated and no drainage of bile-ducts was performed. Of these 24 cases 22 recovered. Two out of 51 patients died as a direct result of the operation, one a cholecystotomy undertaken in a patient reduced to the last stage of exhaustion before a surgical opinion was sought and where at the necropsy a cirrhotic condition of the head of the pancreas was found, and a second in which a cholecystenterostomy was undertaken in the presence of adhesions that appeared too formidable to deal with considering the poor condition of the patient who succumbed a few hours later. In this case necropsy revealed a stone in the pancreatic portion of the common duct which would have been discovered had the patient's condition permitted a thorough exploration. From four the letters were returned as "Gone, no address." The remaining 18 completely recovered. Of three patients in whom the pancreas was found enlarged at operation, nothing beyond separation of adhesions and manipulation being done, all recovered. In one of these cases glycosuria has supervened and is still present, though the patient seems to be well. The after history of one cannot be traced. Of the third word has been received to say that she is well, 14 years after operation. Thus I have no hesitation in advocating operation in this class of cases after general and medical means have had a fair but not too long a trial and the results I have given will, I think, justify my conclusions. A search through the literature of the subject has revealed the facts that (apart from my own cases, 51 in number, with two deaths, or a mortality of 3·9 per cent.) there have been 62 operations for chronic pancreatitis recorded, of which eight died, yielding a rate of mortality of 12·9 per cent. These cases have all been verified for me by Mr. A. Clarke.

ON TREATMENT WITH ANTITUBERCULOUS SERUM.[1]

BY ALEXANDER MARMOREK, M.D.

ACCEPT, gentlemen, my heartfelt thanks for the kind and flattering invitation which gives me an opportunity of discussing before this most distinguished body the present state of a research in which I have been engaged for a number of years and which at the present time occupies one of the first places in medical and social questions—namely, the treatment of tuberculosis. The increased incidence of this disease in some countries and the fact that in other countries there is little diminution in the relative number of individuals who are attacked make the study of tuberculosis not only of great scientific importance but also an international necessity. The further the bacteriologist pushes his laboratory work the more he is convinced that the long-sought-for cure can be found from an exhaustive study of the bacillus, its products, and its vital functions; the more must he strive to free mankind from his fell disease.

The hygienic measures to prevent the spread of tuberculosis interest, in the first place, the social economist and the statesman, and, secondarily, the physician. The vaccination against tuberculosis of the coming generation could hardly effect a radical diminution in tuberculosis before the lapse of a century. It is important not to lose sight of the value of such vaccination but this value must not be exaggerated. It must occupy a secondary rôle in the actual battle against tuberculosis. It can only become of first-rate importance when we have definitely given up all hopes of discovering a remedy. What mankind demands at present, what the physician looks for from those who are occupied with the study of Koch's bacillus, is a cure for those already diseased. This is our immediate and most important duty.

Within this scope science has already been enriched by many and important facts. First, we know that the human organism is in general refractory to the tubercle bacillus. Not only is man protected in most instances from infection by this bacillus, but even of those who already show symptoms of the disease nearly one-fifth, or 20 per cent., are enabled to recover without fail by means of their own natural immunity. The statistics which have been recently published in Milan and Zürich sufficiently bear out this statement. Further, an exhaustive study of the results obtained by all the numerous and different curative methods which have been published in the last 20 years shows that the number of recoveries due to these methods amounts to 20 or 22 per cent. The third and final deduction is derived from the comparison of the first two—namely, that at the present time the same number of people suffering from tuberculosis are cured whether they are under some medical treatment or other or whether they are left entirely to themselves. Must we conclude from this statement that the treatment hitherto pursued is not of the slightest benefit to the patients? Certainly not. In reviewing the matter in detail the following facts may be observed. By careful medical treatment of the symptoms, by placing the patients under propitious surroundings, by a sojourn in a good climate and in sanatoriums, by protection from accidental harmful influences, there is a possibility of curing a certain number

[1] A paper read at St. George's Hospital on March 23rd.

of persons. Experience proves, however, that this cure is restricted to a minimum percentage and it also shows that most of those who are cured possess such a physique that the very diagnosis of tuberculosis must have been a surprise to the examining physician. That these patients belong to the small number who vacillate on the line of demarcation between the 20 and 80 per cent.—namely, those who recover by natural immunity and those who die because of the lack of this immunity—seems to be proved by the following facts. First, that acute and general infection with tuberculosis, where we must pre-suppose an absolute lack of immunity, cannot be cured by the ordinary methods of treatment. Secondly, that the only cases which can be brought within the fortunate 20 per cent. of curables are those in which the progress of the disease has not been too great. In other words, a high degree of natural immunity is absolutely essential to the curability of tuberculosis. When these patients are left entirely to themselves and are not able to bring into play more than a very feeble degree of natural immunity against the infection the disease undeviatingly follows its course. It is difficult, if not impossible, to predict, after the disease has reached a certain intensity, which cases belong to the favoured elect. It would be of the highest value to find a method of measuring the bactericidal power of an individual. If we could examine the serum of a patient from this point of view we should have an instrument for making our prognosis more individual and more personal. Such a prognosis is impossible at the present day. It is most difficult to predict at the commencement of pulmonary tuberculosis whether the disease will or will not progress quickly because we possess neither a specific treatment by which to arrest the progress nor a physiological means of diagnosis by which to measure the degree of self-defence of the individual.

Physicians in adopting the treatment hitherto employed dealt with the clinical symptoms, aimed at warding off complications, or strove indirectly to fortify the organism. The goal of modern therapeutics is an etiological one, its object is to vanquish the cause of the disease.

The most interesting character of tuberculin led, not only its inventor but also many other physicians, to believe that in this substance we had the key for the cure of tuberculosis. The idea that tuberculin, which is in reality an integral substance of the bacillus, may be the primary cause of the pathogenic symptoms of tuberculosis must be abandoned. I do not wish to revert to the different reasons already published, which make me believe that tuberculin does not play the rôle attributed to it. I will merely cite the following experiment which proves that tuberculin is in reality only a reactive which causes the bacilli to secrete another, and hitherto unknown, toxin. This new toxin is, I believe, the weapon with which the bacilli attack and undermine the organism.

We inject under the skin of a guinea-pig a very small quantity of bacilli, so small, in fact, that it is impossible to prove their presence, even by microscopic examination. There is no increase of the temperature of the animal. 30 minutes later we introduce one eightieth of a drop of tuberculin into the brain of this animal, a control animal receiving at the same time the same quantity of tuberculin in its brain. A rise in the temperature of the control and of the inoculated animal is noted, but it is always more marked in the inoculated animal. This genuine and precocious tuberculin reaction can only be explained by the fact that the injected tuberculin stimulated the bacilli, which had been previously introduced under the skin, to secrete a toxin which causes the fever. If tuberculin is employed as a method of treatment and injected in very small doses we obtain the same result that is reached in this experiment—namely, that the injection of tuberculin causes the bacilli to secrete a toxin (not identical with tuberculin) which causes the fever.

As a matter of fact, the aim of the treatment by means of tuberculin is an active immunisation, but this active immunisation is peculiar in that the toxin which is necessary to its success is produced in the diseased organism itself. Experience has shown that this method of treatment may give, from time to time, favourable results. But these are, and can only remain, exceptions, since it is somewhat difficult to confine the active immunisation by producing the toxin in this indirect way, as the quantity of toxin secreted by patients who have been subjected to the same injection of tuberculin varies with the individual. The dangers we encounter when we transgress this limit are, on the other hand, well known. Moreover, the reason why we are obliged to exclude the greater number of advanced cases from this particular treatment becomes clear. First, because in these cases, in which there is such an extraordinary mass of bacilli, even the smallest quantity of tuberculin produces too great an intoxication; and, secondly, because in febrile cases the same toxin is continually being produced. In consequence of this there is an absence of the necessary intervals of time and so the formation of an antitoxin is prevented. The injection of tuberculin would cause an increase of intoxication by this same substance—the true toxin—and would lead to an augmentation of the fever and an aggravation of the disease. All of these results have been observed by clinicians.

These inconveniences cease the moment we replace an active immunisation by the surer passive immunisation. Were we to inject into patients the antitoxin already produced we should not only cure those consumptives who possess a certain degree of natural immunity but even those who are practically wanting in this immunity. On the other hand, those patients in whom at the present day the gravest prognosis is given—patients, that is, in whom the infection is most acute, in whom the intoxication is obviously the all important symptom, and in whom the pathogenic rôle is self-evident—must derive the greatest benefit from the antitoxic serum treatment; while those who at present are looked upon as giving a somewhat better prognosis—namely, patients suffering from the chronic form of the disease in which a large amount of fibrous tissue is formed—would not show, theoretically, such rapid amelioration. Such a specific antitoxin would have to combat just that symptom upon which we have little influence at the present time. Prepared by the real poison it would cause the hectic fever, which is produced in the body by the same poison, to disappear. The anatomical lesions which are the first and local consequence of the intoxication, the tuberculous infiltration of the tissues, would be forced to retrocede by the disintoxication, and the repair of the lesions would depend on the varying power the cells of the affected organs may have for forming fibrous tissue and upon the degree of development reached by the disease. It appears, therefore, that as in all specific methods the moment of application of the treatment is of the highest importance, just because it is directed not against the accidental symptoms but against the primary cause.

I believe that I have succeeded in preparing the real tuberculous toxin in vitro. I will assume that the method employed for preparing my antitoxic serum is sufficiently known.[2] After I had recognised in my laboratory work that large doses of serum could harm neither diseased nor normal animals, after proving that commencing tuberculosis in such sensitive laboratory animals could not only be arrested but cured, and after I had been convinced that the serum could be used on mankind, one thing became clear to me: tuberculosis, with its chronic course and variations of development, is not to be compared as regards its treatment with epidemics of acute diseases such as plague or diphtheria. The bare statistics of the diminution of the death-rate would probably not indicate the value of the serum before a number of years had elapsed. On the other hand, we must recognise that the method hitherto employed to judge of the value of the different attempted cures of tuberculosis is wrong. In all these, cases in which the extent of the disease was slight were selected. Not only is the conclusion *a minore ad majus* false, but we cannot tell whether these cases should be classed amongst the self-cured number or not. Treatment of such cases should be postponed until the remedy has already given good results in more advanced cases—that is to say, until its curative value is beyond question.

It was for this reason, and not simply because I was actuated by external circumstances, independent of my will, that I decided to begin the treatment with severe cases. I wished to descend the ladder from the top to the bottom, from the most severe to the slightest cases, and not the reverse, as was done by my predecessors. I thought that this was the only true scientific course to pursue. I could anticipate that a number of extraordinarily severe and helpless cases could not be affected by the serum treatment. But it was necessary to determine, if I desired successfully to carry out my plan, at which advanced stage of the evolution of the disease the serum would begin to take

[2] See THE LANCET, Dec. 12th, 1903, p. 1642.

effect. When this point was reached—that is to say, when the severity of the symptoms or the extension of the lesions was such that the favourable effects produced could only be explained on the basis of a specific action of the serum—I would be absolutely justified in considering such results as indisputable proofs of the value of my remedy. The clinician cannot establish the truth except by such a method as this, whilst for the real scientist the natural limit of treatment of extremely rare cases is not an argument or a proof against a new remedy. I persist in upholding that the impartial observations of this kind of patient can enlighten a physician as to the specific character of the serum. When the different symptoms of intoxication are neutralised, when the infiltration retrocedes, when the more recent lesions heal, when, in spite of all clinical expectation, just such cases improve, then even from a more or less restricted number of observed cases can we draw a justifiable conclusion. It is in this way that we treated at the commencement of the investigation nearly all cases which have presented themselves, even the worst. Our first conclusion from these cases was that a long series of serum injections which, as a matter of fact, had been tried for the first time, was not only possible but in no wise harmful to the patient. We found that certain individuals could not support the new serum just in the same way as certain patients cannot support other serums. For most patients, however, there is no serious reaction whatever. The most important observations which we made at the commencement of this investigation led us to divide all tuberculous patients treated by the serum into great classes, so far as the prognosis was concerned. By this division we can give a nearer approach to an individual prognosis because we are in a position not merely to give a vague prognosis of the chances of the patient but actually to enumerate them. This division is based on the duration of the illness. In general it may be stated that the earlier the infection the more probability there is of benefiting the patient. The younger the lesion the quicker are the healing effects of the serum to be expected. The rational conclusion of these observations is, in fact, realised when in cases of chronic tuberculosis with acute extensions the most recent lesions are rapidly healed, while the older parts in which there are mechanical destruction, necrosis, and loss of tissue are but slowly rebuilt. The extension of the lesions plays a less important rôle and this is in full conformity with the character and manner of the action of the serum. The serum is directed against the intoxication in its primary effects. If such primary lesions alone are found a *restitutio ad integrum* can be accomplished.

Allow me at this point to present to you such an example. It concerns a case recently shown before the Société de Thérapeutique at Paris. A woman, 33 years old, who up to the period of her illness had enjoyed good health with the exception of an attack of pleurisy of short duration ten years previously, fell suddenly ill in the month of August, 1903, with every classical symptom of acute miliary tuberculosis of both lungs. The symptoms followed each other with frightful speed. Her fever rose higher and higher, the dyspnœa became insupportable, the sputum and the number of bacilli increased, auscultation showed the rapid spread of the infiltration, and her general state of health became worse and worse. I began to treat this case 27 days after the inception of the disease, when the fever had reached its highest point and when a prognosis had been given that her case was absolutely hopeless. All other treatment was excluded. The patient received in 47 injections 720 cubic centimetres of serum. The temperature chart showed the gradual decrease of the temperature and the decrease in the number of respirations, although the pulse remained for a long time rather abnormal. After treatment absolute recovery was proved. The lungs became normal as well as the temperature and respiration and the general health, according to the two medical men who treated the patient, is even better than before her illness. A small quantity of sputum is still expectorated every morning but this sputum has been for months absolutely free from bacilli. I attribute this good result principally to the fact that the treatment began at a very early period, when no irreparable destruction could have taken place in the affected organs.

Another example of acute tuberculosis, also treated by the serum, gives a just idea of the importance of the period at which the treatment ought to be employed. In this case, of which I will give a description, the patient had been suffering from an acute infection for three months. At the first examination large cavities were found. In addition to the intoxication with the tubercle bacillus we had to contend with a mixed infection. The general incapacity of the lungs to repair cavities by cicatrisation must also be remembered. This combination of unfavourable circumstances made the successful issue of the treatment more than doubtful. Even in this case, which ended in death, one can note on the temperature chart, for a time at least, an indisputably beneficial influence of the serum upon the temperature. Here undoubtedly a disintoxication was produced for a certain time, during which also a general improvement in all the other symptoms was shown—the appetite, sleep, night sweats, and expectoration. The quantities of injected serum were great, but owing to the fact that the poisonous products of the cavities were carried unceasingly into the circulation the influence of the serum was vitiated and the patient died after receiving 700 cubic centimetres of serum in 39 injections during a period of three months.

The more acute the illness the sooner may we expect good results from the serum. In the most acute form of tuberculosis—viz., meningitis—I have not been fortunate enough to obtain a cure and I believe that this want of success must be attributed to the fact that the remedy has been applied some days too late, at a moment when the visible anatomical lesions as well as the intoxication of the cerebral cells had developed to too great an extent. It is next to impossible to make a diagnosis with certainty during the first few days of an attack of tuberculous meningitis and when such a diagnosis is finally established the period of expectancy, of hesitation, and of doubt having been added to the time necessary for the incubation the moment has passed when we might have hoped to reach a favourable result by means of the serum.

Perhaps in the future it will be possible to establish an earlier diagnosis by a method which I have lately indicated and which is based on the recognition of the presence of a very feeble number of bacilli in liquids. As was explained before, it is possible to get a tuberculous reaction, a rise of temperature in the guinea-pig, by injecting a small quantity of bacilli under the skin and later tuberculin into the brain. I have demonstrated in a number of experiments of this kind that the presence of tubercle bacilli in an injected fluid may be taken for granted when the rise of temperature reaches at least 2° C. above that noted before the experiment began. I made the experiment in the following manner. Two guinea-pigs were used the temperature of which was about 38° C. I injected into one animal one cubic centimetre of spinal fluid extracted by lumbar puncture from the suspected case. The other received the same quantity of a normal spinal fluid (it is not, however, necessary to inject any spinal fluid into the control animal). 30 minutes later both animals received one-eightieth of a drop of tuberculin in the brain. The temperature at the end of 30 minutes rose in both. You will note that the control animal did not develop as high a temperature as the animal inoculated with the tuberculous spinal fluid. In the latter the temperature rose more than 2° C. In this way it was possible to determine the diagnosis in a few hours, while we had to wait four weeks before the infected animal presented tuberculosis of the lymphatic glands.

I propose, therefore, this method for general adoption. Perhaps it will be possible in this way to diagnose a certain number of cases almost in their incipiency. I see no impossibility in extracting small quantities, from one to two cubic centimetres, of spinal fluid from a case of this kind repeatedly, every day even, before even definite clinical symptoms are manifest, when, for instance, the child presents only vomiting in its cerebral form, change in mood, headache, and constipation. By this method the presence of bacilli can be diagnosed at the moment they enter the spinal fluid. It seems possible that if the serum were given early enough some cases at least of this absolutely fatal disease might be saved when we bear in mind the favourable influence exercised by the serum on those few cases we have had the opportunity of treating, although we have unfortunately arrived upon the scene too late to ward off the fatal issue.

I will describe briefly such a case. Some time after the first two injections and for more than two days the child became calmer and could sleep—in fact, he slept quite well for six or seven hours without interruption. One symptom, as was noted in nearly all cases, was a disappearance of the

headache and the temperature, as can be perceived on the charts, has a tendency to fall. The respiration and the pulse up to the last three days became absolutely normal, although before the beginning of the treatment Cheyne Stokes respirations were present. During this period the mental functions were almost normal, the child answered questions, the vomiting, which up to the time of application of the serum had been very troublesome, disappeared absolutely, and the power of deglutition was preserved; briefly, the condition of the child was ameliorated at every point.

There can be no doubt that this child, like the preceding cases, had his life prolonged for a week or more by the arrest and even improvement of the clinical symptoms. Note also in this case the great quantities of the serum, as much as 30 cubic centimetres a day, that the child supported without harm. I cannot sufficiently insist that if the serum is to give sure results this can only be accomplished by the extension of the application. The 19 cases we have had the opportunity of treating up to the present time are not a sufficient indication of the capability of the serum to obtain cures in meningitis. When in tuberculous meningitis the toxin is fixed in the cerebral cells, as it is in tetanus, we can only hope to effect a cure if the serum is given during the first days of the illness; we cannot expect a cure unless we commence the treatment before the anatomical lesions caused by the spread of tubercles have covered too great a zone. As, on the other hand, we are in possession of absolutely no other curative measures against this terrible disease we must hope that the use of the serum against meningitis will be adopted to such an extent that finally a definite judgment based on a much greater experience can be given on the value of this treatment.

What is understood by the general public and physicians by the term "cure of tuberculosis" concerns the treatment of pulmonary consumption. Many attempts during a long period of time have been made to reach this end and the following question may therefore naturally be presented to me, Is the serum capable of curing pulmonary consumption by specific action? My answer to this is, without reserve, "Yes." I should like to tell you the path I have followed. I wished to construct by a synthesis of the action of the serum on single symptoms the complete action of the serum. Every single case was for the most part so severe that it could only furnish a limited field for symptomatic observation. Even from such unfavourable cases we are still able to draw conclusions. The cure of somewhat more favourable cases, taken together with these observations, justifies my categorical answer to the above question. After having observed that the too severe cases—namely, those with irreparable lesions, with large cavities, and those of long years' standing (in these the prognosis is as unfavourable, so far as the serum is concerned, as cases in which there is extensive destruction of the tissues)—derive little or no benefit from the serum I began to treat those cases which represent really the great mass of cases of consumption. By this I mean cases in which the illness dates back one or two years, in which there is a more or less continuous progression of the disease, and in which all the attempted cures have had no beneficial results. These cases, according to clinical and scientific experience, belong to the great class in which the disease must reach a fatal conclusion at the end of about three years. To have succeeded in arresting, improving, and even curing the symptoms of such cases is to me an indication of the value of my serum. I must remark that none of our patients, without exception, received any other medical treatment beyond the ordinary hygienic measures. The serum was the only treatment employed.

Two points deserve our especial attention—viz., the most recent portions of the infiltration and the fever. The most recent extensions of the infiltration—that is to say, the portion of diseased tissues in which the acutest form of the whole affection is represented—were diminished by the influence of the serum and very soon the extent of the disease in the lung (nearly all the cases were ones of old standing disease) was restricted to its original focus. This happened in an extraordinary number of cases and sometimes after only a fortnight of treatment. (Here Dr. Marmorek showed the temperature chart of some of these cases.) You notice that with the progress of the treatment the physical signs of consolidation, the moist sounds, and other phenomena observed on auscultation improved. The normal condition is once more reached.

The reconstruction of the tissue of the older and duller parts is more difficult to bring about, but then in this condition the action of the serum must necessarily be very slow. It is only after a long course of treatment that changes of this kind take place to such an extent that they may be determined with certainty by our clinical methods. It is certainly impossible to clear the portion of the lung which is enveloped with pleuritic membrane and in which there is a large amount of fibrous tissue. I recall a case in which there was dulness over the superior third of the left lung and in which after treatment all symptoms disappeared. I will give you an account of this case which can be taken as a standard of the prolonged treatment of a rather chronic case. The first symptoms were observed in January, 1901. The patient was a woman with no hereditary taint who had had pleurisy some years before. Bacilli were found on the first examination of the sputum (September 1901). In May, 1902, when the patient came back from a sanatorium, we found on examination of the right side coarse and prolonged respiration, sibilant rhonchi, and on the left side dulness of the superior third of the lung, diminished resonance, feeble breath sounds, and abundant râles. The sputum was abundant, the cough was frequent and painful, and the evening temperature was high. Night sweats were profuse, dyspnœa was present, and the patient suffered from loss of appetite and enfeebled nutrition. Our treatment began in September, 1902, when a new and prominent symptom was noticed. The voice had become hoarse and the larynx painful, more especially at the moment of deglutition. After 77 injections the general state was perfect, the patient felt absolutely well. She had a cough and expectorated only a few grammes daily. For three months now the sputum has been free from bacilli (the presence of these, in spite of the absence of all other clinical symptoms, necessitated our giving such a large number of injections). The patient's appetite is excellent, she sleeps well, and there are no night sweats. With regard to the clinical signs which are now present there are dulness of the lung to the same extent as before, resistance to the finger, and diminished vibration. The inspiratory murmur is strong and coarse; the expiratory murmur is sonorous but not prolonged. On auscultation some mucous râles which disappear on coughing can be heard.

The foregoing was a case then in which the disease showed a strong tendency to progress and in which the patient had passed six months in a sanatorium without amelioration and had, in fact, returned home in a worse condition. You can observe by the chart what improvement there was a short time after the beginning of the injections. Notice here the slow decrease of the quantity of sputum and at the same time the increase in the weight of the patient who was not submitted to any other medical treatment, to rest, or to forced nourishment. Greatly improved, the patient interrupted the course of our treatment and went to the country for the spring and summer, but there was a relapse. The treatment was again taken up at the moment when all her symptoms relative to the situation at the time of her departure to the country had become aggravated. Only after some months of this further treatment did she recover absolutely, according to our firm belief, from her pulmonary and laryngeal tuberculosis.

In a large number of cases I have succeeded in reducing the hectic fever. A large proportion of such cases had been previously treated with absolute rest in sanatoriums and elsewhere or with different drugs but without result. It was only after treatment with the serum that a fall of the temperature was definitely produced. It is important to examine the sputum to see if there is a severe mixed infection, especially with streptococci; these latter are, as is known, very often present, but by mixed infection I mean their presence in great quantity, as is nearly always the case when the fever is associated with excavation. In such a form of hectic fever the result of the application of the serum is not very marked. I would suggest in such a case the alternating use of both serums, the antituberculous and the antistreptococcic. In the real hectic fever, in which the tuberculous intoxication is the cause, the use of the serum has actually been successful. You can see by a number of temperature charts and can yourselves judge of this action which has already been observed by a number of clinicians. You can see in these how long it has taken to reduce the high degree of fever.

Dyspnœa is a symptom which frequently yields to the serum. The relief is so striking in some cases that the patient spontaneously informs the physician of it. Dyspnœa

is not only a result of the mechanical diminution of the respiratory surface but is also a symptom of pure intoxication. In the early stages of the illness it is often so severe that the tuberculous toxin must exert some action on the centre of respiration itself. It is a symptom which is often persistent and which makes the patient painfully conscious of his disease. With almost no exception, after treatment the dyspnœa disappeared, the number of respirations to the minute became fewer, and the patients who had been confined to inactivity because of it became able to take up their former means of livelihood. Dyspnœa is the first symptom ameliorated by the serum.

As regards the influence on the sputum our experience has not yet given uniform results—that is to say, I am not in a position to explain why in a certain limited number of cases there is an increase in the amount of sputum, while in the overwhelming majority of cases, after a short period of increase, a manifest and constant diminution takes place. Let me show you the chart of a patient belonging to this latter class in which the sputum daily weighed exhibited this constant diminution. You will notice also that when the application of the serum was discontinued, when the patient had not yet been cured but had temporarily abandoned the serum and gone to the country, there was again an increase in the amount of the sputum and that when the injections of serum were renewed the decrease of sputum was again patent.

Every case in which no diminution of sputum was brought about by the application of the serum was suffering from excavation. These patients were not under treatment for a long time. We cannot expect to be able to determine in what proportion of cases the serum has no beneficial influence until we have had a very wide experience. I must add, and this is a well-known fact, that even cured patients continue for some time to expectorate daily several grammes of sputum. This condition quite naturally follows in patients who have had such severe affections of the lungs and bronchial tubes. Tubercle bacilli decrease in proportion as the sputum becomes less. In general we have noticed that their complete disappearance does not occur for a long period, even months after all the other symptoms have disappeared. When a complete cure is established an analysis of the sputum will still prove the presence, now and then, of a few sporadic bacilli. It remains an open question whether in such cases the bacilli do not exist merely in saprophytic life, in some fold of the lung or bronchial tube, which would be analogous to the presence of tubercle bacilli on the surface of the tonsils of normally healthy persons. The question presents itself whether in such cases the serum should be continued or whether we should simply wait. I believe that about every fortnight or three weeks a few injections of the serum should be given to preserve in this manner the immunisation of the organ and thus, as far as possible, free it from the bacilli.

One symptom in particular has attracted my attention, although this point seems to have no direct relation to the antitoxic action of the serum—I refer to hæmoptysis. It goes without saying that a great number of the patients whom I, as well as other medical men, have treated with the serum had passed before through severe and frequent attacks of hæmoptysis. I need hardly affirm that the purely mechanical cause of the rupture of the blood-vessels remains outside of our sphere of action and we must not forget that it can act most irregularly, but it is nevertheless remarkable that within my observation and that of other physicians among those patients treated with the serum there has been only one case of real hæmorrhage. Among such patients there have been cases in whom previously to the treatment in the same sanatorium, for example, as many as 20 serious hæmorrhages have occurred. Whether this absence of hæmoptysis is merely accidental or whether it is due to the direct action of the serum in the infiltrated portions I am as yet not prepared to say, although a great number of observations ought really to lead us to the latter assumption. At any rate, I draw your attention to this point.

I do not wish to enter into the details of the influence of the serum on the general symptoms, such as are regularly observed in tuberculous patients who show by any treatment a general amelioration, an improvement of the appetite, an increase in the weight (over-nourishment was in our patients intentionally excluded), or a diminution of the cough, and consequently an improvement as regards their sleep. The improvement of such symptoms is naturally greeted with delight by the physician and especially by the patient. But they are only of importance as an index of the value of the specific action of the treatment when the diseased foci themselves are beneficially and definitely influenced. How often do we not see, thanks to a special diet, a patient increase in weight, while at the same time we can observe a progression in the infiltration of the lung. Every day patients are seen in whom, in spite of the increase of weight, there is a development of the disease. One can only attribute a therapeutic value to the amelioration in the general symptoms when this improved condition in the general state of the patient is a natural result of the diminution and improvement of the local foci. It is for this reason that I excluded all other means of treatment because I started out with the conviction that a specific treatment of the local process of tuberculosis would beneficially influence the general symptoms, and my experience has not belied this expectation. These results, obtained purely and exclusively by the application of the serum, have a greater value for establishing a justified conclusion.

By remaining true to the principle adopted in the very beginning of the treatment I believe that I have arrived at a specific effect of the serum, and I have reached the conclusion that a disease so advanced as tuberculosis of the lungs demands a long period of treatment for an absolute cure. Many of our patients are still under treatment and the time has not been sufficiently long absolutely to complete their cure. But even with most of these the physical symptoms have undergone so much improvement that the final and complete cure can be anticipated with a certain probability. Others who had the patience to pursue the complete treatment for months and who began their treatment long ago are to-day to all medical appearance cured. Do not forget that it was not the most favourable cases which were chosen for these serum injections. I did not desire any slight cases. The few cases of this class which for special reasons I did treat underwent a proportionately quicker process of recovery. I believed, and it is still my opinion, that the slight cases should be treated only after the specific value of the serum has been indisputably proved. I think that this moment has now come and that those who already have had results with the application of the serum in severe cases may now begin to treat less advanced ones, for in the treatment of these slight cases immense advantages which previously I had purposely refused may now be derived. The result will necessarily be more conclusive.

The treatment of tuberculosis as a disease of the masses will be easier, as even with the advanced cases which I have hitherto treated the patients were very often still able to carry on their daily work.

In these therapeutic trials I considered surgical tuberculosis as equivalent to the slight lung cases, for patients suffering from this form of tuberculosis have a greater chance of recovery even when the disease is well advanced on account of the favourable condition of the tissues. The lung is not a good field for the rebuilding of destroyed tissue. It is owing to this histological condition that lung tuberculosis heals spontaneously with such difficulty, whereas bones and articulations and glands recover relatively very much better as long experience proves. We can, perhaps, then draw a parallel between a well-advanced case of surgical tuberculosis and a slight case of pulmonary consumption so far as the chances of absolute recovery are concerned. With but few exceptions I have handled only severe and long-standing cases of surgical tuberculosis. The earlier and slighter cases have been cured after a few injections. For instance, in tuberculosis of the sterno clavicular articulation with ulceration and abundant suppuration dating from the month of November, 1902, various local treatments were tried. The diseased portion was curetted in the month of June, 1903. The suppuration persisted, however, and a fistula formed, reaching to the bare bone. In October injections of the serum were given and a change was immediately apparent At the end of eight days suppuration stopped and in a fortnight there was perfect cicatrisation. It must be remarked that beyond the use of the serum no medication was given, although the wound was dressed with sterilised gauze. Such a case can be taken as a type of the evolution of slight surgical cases when the serum is employed.

Let me now give you the history of a very serious case. The patient was a robust man, 35 years of age, who began to suffer from a serious catarrh of the rectum about five years before my treatment was commenced. The nature of this disease was not established with certainty at that

time but it is highly probable that in the course of this disease a tuberculous infection of the affected organ took place. During a period of four years he suffered various morbid accidents of greater and greater intensity. There was suppuration of the glands in the groin which had finally to be removed and in which tubercle bacilli were found, and there was great and increasing pain of the second lumbar vertebra, which made any movement difficult and painful. There was an increase in the fever. Intestinal fistulæ opened on the site of the old suppuration of the groin. Finally, a fæcal fistula appeared in the scrotum from which gases and intestinal material exuded. Well-defined tuberculous ulceration, by local infection, occurred above the anus and at last the pain in the lumbar vertebra was so agonising that even sitting became practically impossible. Five operations were undertaken with absolutely no result. The general state, owing to the constant fever, the abundant suppuration, and the incessant suffering, became so critical that a fatal issue seemed inevitable. The treatment began about a year ago and the patient received in all 28 injections of serum. The fistulæ and skin ulceration healed completely. As a rather disagreeable aftermath of the cicatrisation of the ulcer in the rectum a ring stenosis formed and was duly and successfully operated upon. The patient is now in a perfect state of health.

I show here a certain number of photographs which exhibit some old and neglected cases of gland and bone tuberculosis. All these cases have been operated upon before but suppuration and fistulæ returned. I must add that in some of these cases the patients had not the patience to continue the treatment during the necessary time, and let me here call your attention to the fact that when the treatment was interrupted at a time when the local processes were not yet sufficiently healed the improvement continued for three or four weeks, exactly the time, as is known, of the general duration of conferred passive immunity.

My personal experience with the treatment of surgical tuberculosis has not increased much since my publication of some months ago. I cannot therefore draw absolute conclusions regarding these forms but my observation thus far permits me to state that even severe cases of surgical tuberculosis, as, for instance, cases of Pott's disease and hip-joint tuberculosis, can be cured by the exclusive use of the serum. I do not wish to speak of other and rare forms of the disease, as of the eyes, for example. It is the duty of the specialist to try on these the new therapeutic measure. The classification of those patients whom we hope to reach is not yet possible. Only with the coöperation of many clinicians will we be able to reach a classification and thus be able to establish for each individual case its proper prognosis. Such coöperation as I have had so far has enabled me to establish, to a certain extent, the technique and dose of the serum. In the beginning the doses proved too small; later, as we increased the injected quantity, we noticed that the serum did not agree with many of the patients. With others it seemed as though, with the unbroken use of serum, a kind of cumulative action took place in the sense that there was a certain intolerance to the horse serum *per se* and not to its antitoxic quality. Do not forget that it is the first time that serum has been repeatedly injected during a long period. This intolerance must be ascribed to the formation of antibodies of the albuminoid substance, for when I changed the technique which, though not yet final, is nevertheless, as far as it goes, good, I noticed that the reactive effects of the serum—such as fever, infiltration and œdema at the point of injections, and even swellings of the glands—became more and more rare, and even when they did appear were weak, unimportant, and transient. The tolerance of the serum is to-day, according to my method of application, absolute, and as the injections continue they seem to agree more and more with the patient. This point of tolerance is reached by a graded series of injections with intervals of rest. As a general statement the doses should be adapted to the individual constitution and the state of the disease of the patient. A series of daily doses during from four to five days agrees well with the patient, especially if between each two series there is an interval of three or four days. After two or three series of injections it is well to discontinue them for a week or a fortnight. The dose for rather chronic cases is ordinarily five cubic centimetres, while in acute cases as much as from 20 to 30 cubic centimetres can be used daily during the week. Even children support this dose without danger. To-day the reactions take the form generally of the well-known serum "erythems" which disappear in two or three days. The patients support this disagreeable accident very easily. I can say that I have never seen any serious consequence due to the injections of the serum.

This is the present state in rough outline of the treatment of tuberculosis by my specific serum. When you take into account that I have with intention surrounded myself with unfavourable circumstances to approach the truth as far as possible without mistake the results are more than encouraging. I can hardly be accused of exaggeration in claiming that at least the results are satisfactory. I hope that the attempt to introduce into practice this new and promising specific treatment of tuberculosis will at least enlist the interest of those who take to heart the battle against this most terrible disease of the masses. That you have extended to me the honour of laying before you this report proves your sympathy, for which I am duly appreciative, and I take this opportunity of expressing my deep gratitude to those of my English colleagues who lend their distinguished scientific support to our common work by their clinical investigation.

INTRAVESICAL SEPARATION OF THE URINES COMING FROM THE TWO URETERS AS AN AID TO DIAGNOSIS IN SURGICAL DISEASES OF THE KIDNEYS.

BY R. A. BICKERSTETH, M.A., M.B. CANTAB., F.R.C.S. ENG.,
ASSISTANT SURGEON, LIVERPOOL ROYAL INFIRMARY.

IF the two kidneys be regarded merely as two sides of a single excretory apparatus medical men know that they have for a long time had at their command methods which have enabled them to form an opinion, more or less accurate, as to the degree of efficiency with which this common excretory apparatus is doing its work, and if these methods are still not quite perfect they have at all events been largely added to and improved during the last few years. But whenever it has been important to ascertain with accuracy the relative efficiency of one kidney, as compared with the other, it must, I think, be admitted that diagnostic methods have hitherto been utterly unsatisfactory and that the question is one before which the medical man has stood practically helpless. Considering the frequency with which "exploratory operations" on the kidney are now undertaken and that these operations not infrequently end in the excision of the kidney explored, without any certain knowledge as to the degree of efficiency of the one which is left behind—a question of supreme importance—it may well be asked if the medical profession has not been to blame in so long contenting itself with methods the limitations and imperfections of which have compelled observers to leave so much to chance.

Practically, diagnostic methods have been limited to an examination of the mixed urines from both kidneys and to an examination of the kidneys themselves, so far as this is possible, by palpation. In cases of kidney disease requiring surgical interference it may well happen that the mixed urines may (at the time of examination) be normal in appearance and may contain no morbid elements; and few will assert that the surgeon can, by palpation, detect differences in size between the two kidneys in a well developed subject unless the difference in size is very considerable indeed. As a matter of fact, in a large number of cases he has had to depend almost entirely upon the patient's history, upon an intelligent description of his sensations as regards the situation and character of his pain, and still more upon the presence or absence of "tenderness" felt when deep pressure is made in one loin or the other. It may be pointed out that "cystoscopy" helps, but in surgical diseases of the kidneys it only does so to this extent—in cases where blood, or pus, is escaping from one ureter an observer who has the skill to bring the orifice of this ureter quickly into his field of view can actually see the blood or pus escaping into the bladder with the rhythmically recurring jets of urine, but he

must be quick or the fluid in the bladder will have become turbid before he has made his observation. If the cystoscope is to be of any further use than this it can only be by that particular adaptation of the instrument which makes it possible to "catheterise the ureters." Many people talk airily of cystoscopic catheterisation of the ureters as though it were a simple procedure and one in constant use; as a matter of fact, I believe that few of these have ever done it themselves, or, if they have, they regard it as a *tour de force* of which they are not a little proud. Very few, indeed, can carry out catheterisation of the ureters with such certainty and precision as to bring the method within their range as a real and practical help and a part of their usual diagnostic routine.

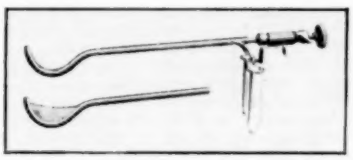
Cystoscopic catheterisation of the ureters and also the much simpler procedure of Kelly (who in female patients catheterises the ureters directly through a speculum in the urethra) will probably always occupy a most useful place as methods of diagnosis or even of treatment in certain conditions of the ureter and kidney. Looked upon simply as methods of collecting separate samples of the urine coming from the two kidneys, however, these methods are either too complicated and difficult or too troublesome to form part of any ordinary routine examination and for this purpose, at all events, they were bound to be displaced as soon as any other simpler method was discovered by which equally trustworthy and satisfactory results could be obtained. And a simpler method has now been found in the intravesical separation of the two urines, a method long sought after but which has only recently been put upon a really satisfactory footing.

My personal acquaintance with the method as a useful and practical procedure dates from a visit to Paris in October, 1903. I had then the good fortune to make the acquaintance of Dr. Georges Luys, assistant at the Lariboisière Hospital. It is Dr. Luys who is the originator of the instrument which I propose to describe and all credit should certainly be given to him for the great advance which has been made in our powers of diagnosis owing to the introduction of his most ingenious and simple device. Briefly, the method of "intravesical separation" consists in placing temporarily in the bladder a vertical septum which divides it into two equal lateral halves. This septum must be water-tight. The urine from each kidney as it enters its own half of the divided bladder is immediately drained away by catheter tubes which form part of the apparatus and is collected in a suitable receptacle attached to the handle of the instrument without ever having become mixed with the urine from the opposite side.

Before Dr. Luys others had sought for help along similar lines and the first of these was Lambotte[1] of Brussels who as far back as 1890 described a plan for intravesical separation, at that time an entirely original idea. His instrument seems to have only just missed success by a very small shortcoming which looks now as though it might have been easily remedied. As it stood, however, it did not find favour and even Lambotte himself seems to have put it on one side. In 1897 Neumann,[2] in Germany, devised an apparatus, but this could only be used for female patients, and even in these it does not appear to have given satisfactory results. In 1893 Harris[3] of Chicago brought out his "urine segregator" and this was certainly the first really practical device of the kind, its chief fault being that while it was successful in effecting a fairly trustworthy separation it generally caused a good deal of pain to the patient upon whom it was used. Dr. Luys[4] first introduced his separator in 1901 and in the following year Dr. Cathelin,[5] of the Necker Hospital, Paris, added to the list yet another instrument of most ingenious construction and for which equal success is claimed. Its mechanism, however, is more complicated than that of Dr. Luys's separator and its cost is considerably greater.

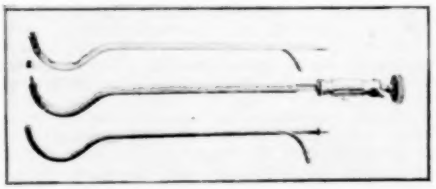
The shape of Dr. Luys's separator can be best understood by a reference to Figs. 1 and 2. It looks like an ordinary urethral bougie with a rather peculiar curve at its vesical end; at the opposite extremity it is fitted with a handle and screw suggestive of a lithotrite. The shank of the instrument, including the curved portion, is made up of three parts: in the middle there is a thin metallic support, flattened from side to side, and on each side of this, and

FIG. 1.



Dr. Luys's separator, showing glass collecting tubes in position. In the lower figure the rubber septum has been raised. (After Luys.)

FIG. 2.



The two lateral catheters are here shown detached. Over the median support the rubber tube from which the septum is formed has been drawn. (After Luys.)

closely applied against it, is a metal catheter tube, semicircular in section. The two catheter tubes are provided with eyes on the concave border of their curved portion; they can be quickly detached from, and reapplied to, the sides of the median support and when they are in place they make up, with the support, a single instrument which is circular in section and corresponds in size to a No. 21 bougie, French scale (between 12 and 13 English). Along the upper edge of the median support runs a little rod which is arranged to move backwards or forwards at will, as the screw at the end of the handle is turned one way or the other; at the junction of the straight with the curved part of the instrument this rod ends in a little chain, the other end of which is attached close to the instrument's point. When not in actual use the chain is slack and lies closely along the hollow of the curve, but it will be seen that by turning the screw the chain can be tightened up until it forms a straight and rigid cord across the curve.

To prepare the instrument for use the two catheter tubes are detached and then, over the median support with the

FIG. 3.

Dr. Luys's separator in position in the bladder. The septum is shown raised. (After Luys.)

chain slack, a thin tube of pure rubber specially prepared for the purpose is drawn. The catheters are replaced and all is ready for work. It will be noted if the chain be now tightened up that as this rises it gradually stretches and

[1] E. Lambotte: Étude sur la Taille du Rein. Journal de Médecine, de Chirurgie, et de Pharmacologie, Bruxelles, Septembre, Octobre, et Novembre, 1890.

[2] A. Neumann: Ein einfache Methode den Urine beider Nieren bei Weibe gesondert Aufzufangen, Deutsche Medicinische Wochenschrift, Leipsic, Oct. 21st, 1897.

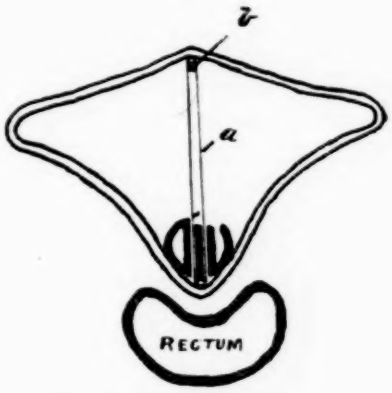
[3] Harris: The Use of the Urine Segregator in the Diseases of the Urinary Tract, New York Medical Record, April, 1893.

[4] Luys: La Séparation de l'Urine des Deux Reins, Association Française d'Urologie, Paris, Octobre, 1901.

[5] Cathelin: Le Diviseur Vesical gradué à Sondes Métalliques Latérales Mobiles, Association Française d'Urologie, Paris, Octobre, 1902.

draws out the rubber tube until, when the chain is tight, there is a complete septum of rubber filling up the whole curve of the instrument. Fig. 3 shows how the curves of the instrument apply themselves against the floor and neck of the bladder when the separator is in use and Fig. 4

FIG. 4.



Transverse section of bladder, showing its floor depressed by the curved part of the separator. It should be noted that the lower edge of the median support projects slightly below the lower edges of the two lateral catheters. The rubber septum *a* has been drawn up and is held in position by the chain *b*.

represents a transverse section of the bladder to show how the "separation" is effected. The floor of the bladder is depressed by the separator and the natural elasticity of the parts is quite sufficient to cause them to fit closely against the convexity of the curve, only very slight pressure being required to make a perfectly water-tight division.

It is right to mention that in Dr. Luys's separator along the whole of the convexity of its curve the lower edge of the median support projects appreciably beyond the lower edges of the two lateral catheters, and this is an essential point, so that the lower edge of the actual "septum" may make good contact with the floor of the bladder. I have recently seen copies of the instrument which have found their way on to the English market in which this point seems altogether to have been lost sight of, and I doubt very much whether they could be relied upon to make any satisfactory or water-tight division between the two sides of the bladder.

Practical Application of the Instrument: "Technique" of Procedure.

The first thing to realise is perhaps this: that though it is easier and better *to introduce* the separator while the patient is lying down, when once the curved part of the instrument has entered the bladder he must sit upright and must remain in this position throughout the whole time during which the "separation" is going on. This is absolutely necessary in order to bring the true "floor" of the bladder into its proper position as the lowest part of it and in order that the curves of the instrument may fit snugly and closely against those parts for which they were designed. A special table is certainly a very great convenience and at the hospital I have had one of the old wooden operating tables altered and have fitted it with foot supports so that it exactly suits my purpose. But such a table is by no means essential and I have on many occasions worked perfectly satisfactorily with the patient laid across a bed or on an ordinary table with the feet supported on two stools. If a "back rest" (closed) is placed underneath the patient's loins and back an assistant can easily raise this when required, so as to sit the patient up and to support him comfortably in the upright position for as long as may be necessary. Before making any other preparations I generally get the patient to drink a pint of water or tea.

A general anæsthetic is not required, for it is really surprising how little discomfort patients seem to feel. Twice over just lately I have had male patients who have submitted to a "separation" on two consecutive days and though on each occasion the sitting was rather prolonged neither of these men made any complaint nor did they feel at all upset by it. The absence of all necessity for any general anæsthetic is to my mind one of the great advantages of the whole proceeding; this alone enormously increases its sphere of usefulness and brings it within easy reach as an ordinary routine diagnostic method. Not only is a general anæsthetic entirely unnecessary, but when it is remembered that the upright position is essential and that a "big drink" beforehand is an advantage we shall see at once that anæsthesia introduces certain entirely unnecessary and undesirable complications. I have only used a general anæsthetic upon one occasion and that was in the case of a young woman who, we feared, would not otherwise submit to even the comparatively short exposure which is absolutely necessary. In some such cases it is probable that a general anæsthetic may be desirable but whenever possible I should much prefer to avoid it. A thorough cleansing of the parts about the urethral orifice can be done by a nurse who then places a pledget of lint soaked in 5 per cent. cocaine solution between the labia. For the preliminary washing out of the bladder and for the actual introduction of a separator the surgeon must of course have a full exposure of the parts, but when once the instrument is well in place and the patient is propped upright during the continuance of the actual "separation" all can be covered up but the handle of the instrument with the two collecting tubes attached to it.

Speaking generally, I have used the separator on many women and by making all possible concessions to their natural modesty and by working quietly, with the assistance of one good nurse and with no one or as few others as possible present, I have not found as much difficulty as might have been expected with female patients. In male patients—and especially in cases altogether unused to any instrumentation—an "instillation" of cocaine (20 minims of a 5 per cent. solution) into the deep urethra is no doubt useful, but the surgeon must always remember that here, just as elsewhere, cocaine has certain definite limitations. While it is entirely satisfactory in preventing the pain due to contact with delicate surfaces or to the cutting of sensitive tissues, it is not by any means so successful in preventing such pain as is caused by *stretching* these tissues or by pulling and dragging on the parts around them. After all, there is only one real way by which the operator can secure the freedom of the patient from pain and discomfort; he must work without hurry and with all possible gentleness.

The first step of the actual procedure is to pass a catheter and to draw off and to set on one side the specimen of the "mixed urines" thus obtained. Next, the bladder is washed out and upon the carefulness and thoroughness with which this is done much will depend. It is essential that the bladder should be thoroughly clean and if each of the last two or three "washings" is collected in a clean urine glass and the fluid is seen to come back perfectly clear the surgeon may feel satisfied that so far he has done his work well. Then about two ounces of fluid are injected into the bladder and all is now ready for introducing the "separator." As a rule the instrument slides easily and smoothly into the female bladder without any difficulty at all; in the male a little difficulty may at first be found. The curves of Dr. Luys's separator, designed solely with the object of making the instrument fit closely and naturally against the floor and neck of the bladder—and which at first sight may perhaps strike an observer as peculiar—are, after all, only a little shorter and sharper than those of the French "bougies de Béniqué," in which very similar curves are selected as being most suitable for the ordinary instruments used in the treatment of stricture. These curves, when once the surgeon is used to them, do not cause any difficulty in getting the point of the separator well into the bladder, but it must be admitted that at and beyond this point when it is required to pass the whole curved part of the instrument right on into the bladder itself a little difficulty may certainly be met with until by practice the operator has learnt how to do it. As soon as the curved part has been passed fairly into the bladder the back-rest is raised and the patient is placed in the sitting position. Then by turning the screw at the end of the handle the rubber partition is raised and the injected fluid is allowed to run off by the two catheter tubes, the ends of which have been closed by our fingers during the foregoing manipulations. This not only shows that the catheter eyes have not become blocked by urethral mucus, &c., but by filling the

catheters themselves it starts what seems to be a syphon action and allows the urine to flow off from the bladder as fast as it enters it from the ureters. In order that the curve of the instrument may press with sufficient firmness upon the floor of the bladder to make the partition water-tight and the "separation" trustworthy only one thing more is now necessary, the surgeon must raise the handle a little, and while doing this at the same time draw the whole instrument gently forwards towards him; it must always be remembered that the most gentle pressure suffices for this and that no force at all is either necessary or permissible. At this stage patience is required, the surgeon must not put the collecting tubes under the catheters at once but must wait; he may have to wait three or four minutes, or even longer sometimes, until the last drops of the injected fluid have come away and urine itself begins to flow. When all is going well the manner in which the urine flows from the catheter tubes is always most striking and characteristic. It comes with the greatest regularity, four or five drops at a time, then a pause for an appreciable interval, and after this another group of drops. Each of these groups of drops represents an "overflow" from the little pool of urine in the bladder in which the other end of the catheter tube is lying and these periodic overflows of course correspond with the rhythmically recurring jets by which the urine normally escapes from the ureter into the bladder. When once the operator is satisfied that all the injected fluid has run off and that urine is now coming he may place the collecting tubes in position; in about 20 minutes he will probably have collected about six cubic centimetres in each tube and the tubes will be full. They can then be replaced by a fresh pair of empty tubes and in this way a second, and if necessary even a third, pair of specimens can be obtained.

Having described the instrument and the method of using it I will now show, by quoting cases, what kind of results the surgeon may expect to obtain from it.

CASE 1. *Application of the separator before and after nephrectomy.*—The patient, a man, aged 27 years, gave a history of frequently repeated attacks of right-sided lumbar pain, generally accompanied by some blood and pus in the urine, and all the characteristic symptoms pointing to renal calculus. He came into hospital for the express purpose of having an exploratory operation; he was practically free from pain at the time. Palpation revealed no difference in size between the two kidneys; there was some tenderness on deep pressure in the right loin. The mixed urines were at the time clear and showed no trace of blood or pus. On Nov. 15th, 1903, application of the separator gave an equal quantity of clear and apparently healthy normal urine in both right and left tubes. On the 17th nephrectomy was performed. The pelvis of the right kidney was much dilated and contained numerous stones, mostly small, with many entangled in the calyces. The cortex was thinned but a good deal of apparently healthy secreting tissue remained. The kidney was removed owing to impossibility of removing all the stones without doing great damage to it. On Dec. 22nd the separator was applied a second time (for 30 minutes). 14 cubic centimetres of urine flowed from the left tube: it was high coloured and loaded with lithates. Nothing came away by the right tube.

CASE 2. *Left kidney functionally absent after nephritic, or perinephritic, abscess which had been opened and drained six years previously.*—The patient, a girl, aged 16 years, complained of occasional attacks of rather severe pain in the left loin. There was a large cicatrix in this loin which was quite sound and firm. It was ascertained that she had been in the infirmary six years previously, that a large abscess had been opened here, but that nothing further had been done. On Nov. 15th, 1903, the separator was applied and kept in for 45 minutes, the following result being obtained: right tube, 11 cubic centimetres of clear healthy urine, with a slight deposit of lithates and mucus on cooling; left tube, only some 10 or 12 drops of turbid fluid; these came singly, and were distributed at very regular and even intervals over the whole sitting. On the 20th operation was performed. On cutting down in the left loin the left kidney could not be found. A small mass of fibrous tissue (which probably represented what was left of it) was so firmly adherent to everything in the neighbourhood that removal was impracticable.

CASE 3. *Hydronephrosis due to stricture of the ureter at its junction with the renal pelvis.*—A woman, aged 21 years, was admitted to the Northern Hospital, Liverpool, under the care of Mr. K. W. Monsarrat in July, 1903. She had a considerable swelling and pain in the left loin which were attributed to injury received in a recent fall. On July 8th Mr. Monsarrat operated, finding what appeared to be a hydronephrosis with hæmorrhage into the sac and a stricture of the ureter at its junction with the kidney pelvis. He was able to treat this stricture by doing a plastic operation on the lines of a pyloroplasty and there was clear evidence (from the occurrence of blood in the mixed urines for a fortnight or so afterwards) that good communication with the bladder had been established. On Jan. 19th, 1904, on application of the separator three cubic centimetres of clear urine came away from the right tube, but not one drop of fluid drained from the left tube. The instrument was kept in for 30 minutes. Possibly the stricture had contracted up again or perhaps some "kink" in the ureter may have been temporarily blocking it. The woman was well and there had been no return of pain or swelling in the loin. In this case the separation was done under ether. The small amount of urine passed should be noted. No preliminary "drink" had been given.

CASE 4. *Large tumour in the right loin simulating hydronephrosis.*—The patient, a man, aged 49 years, gave a history of nine months' uneasiness and discomfort from a gradually increasing swelling in the right side. This had now reached a very large size; it seemed to be fluid but it was very tense; it could be pushed forward from the loin. It was unhesitatingly taken for a hydronephrosis and an operation through the loin was decided upon. On Feb. 2nd, 1904, the separator was applied, the instrument being kept in for 30 minutes. Six cubic centimetres of urine flowed from the right tube; it was clear, of good colour, with slight deposit of mucus and lithates. On cryoscopic examination the freezing point was found to be $-2{\cdot}0°$ C. Two and a half cubic centimetres of urine flowed from the left tube; it was very pale, with practically no deposit. On cryoscopic examination the freezing point was found to be $-1{\cdot}0°$ C. This altogether unexpected and surprising result led to a postponement of the operation and to a reconsideration of the whole case. A second application of the separator on the 3rd confirmed the results obtained on the previous day and gave two specimens exactly similar both in character and quantity to those already described, except that one grain of methylene blue having been given hypodermically a quarter of an hour beforehand both specimens alike were beginning to show traces of colour. At the operation, which was performed on Feb. 5th (anterior incision), the swelling proved to be a large pancreatic cyst. The right kidney was normal.

CASE 5.—The patient, a man, aged 40 years, was admitted into the Royal Infirmary, Liverpool, on Oct. 27th, 1903, complaining of severe pain in the left side, especially about the tip of the twelfth rib, of a dull aching character, but sometimes paroxysmal, radiating down to the left groin but not extending to the testicle. The pain was almost always relieved by the patient lying flat down on his back. He had been suffering like this for two years and was getting worse. "The left kidney was felt to be much enlarged." Under the very natural impression that this was probably a case of calculous pyelitis with a blocked ureter it was decided to cut down into the left loin and to explore this kidney. Examination of the mixed urines showed them to be of specific gravity 1017, acid, clear, pale amber in colour, with no deposit, albumin, or sugar. On Nov. 18th the separator was applied. My note reads: "Instrument passed easily and was kept in for 30 minutes. Urine flowed at normal rate and in equal quantity from both kidneys. The urine is normal, quite healthy, and apparently exactly the same on one side as on the other." Unfortunately, the findings of the instrument were in this case disregarded. It was one of my earlier cases, and as I had not at that time acquired my present degree of confidence in the method I could scarcely expect to convince others of its trustworthiness. On Nov. 24th operation was performed. An incision into the left loin showed an aneurysm displacing the kidney. The mistake was quickly recognised before any apparent harm had been done and the wound was closed. The wound healed and all seemed to be going well, but about ten days later this patient died without warning and with absolute suddenness. A post-mortem examination revealed the condition to be aneurysm of the abdominal aorta which had ruptured into the left pleura.

Cases 1, 2, 4, and 5 were all patients in the Royal Infirmary, Liverpool, under the care of Mr. F. T. Paul. I am indebted to him for his permission to refer to them, as also I am indebted to Mr. Monsarrat for Case 3.

The foregoing cases do not by any means represent the total number of occasions on which I used the separator. I have applied it in many other cases; in some of these there have been marked differences between the two urines and in others little or no difference has been observed. Just as the surgeon may often be led to sound for stone when no stone is present, so he may apply the separator and get a purely negative result, the urine of the two sides being equal in quantity and alike in character. I have selected the cases detailed above because they are the ones in which I have obtained the most strikingly conclusive and useful results and I think that they will be sufficient to prove my point—viz., "that we have it now in our power to obtain separate samples of the urine from each of the two kidneys."

Having accomplished the separation of the urines the next question for us to consider is how to obtain the fullest possible information from the specimens which have been secured. The surgeon can, of course, detect at once the presence of blood or pus in either of the specimens and he can also note whether there is any difference between the two urines either in quantity or colour or in the character of any deposit; but when it comes to applying the ordinary routine chemical tests he must remember that the amount of urine which he has at his disposal must always be small. The little glass tubes used to collect the urines as they drop from the two catheters hold about seven cubic centimetres (two drachms) each and though the rate at which urine flows from the kidneys of course varies I find that on the average it takes about 20 minutes for a healthy kidney to fill one of these tubes. "All things come to those who know how to wait for them" and more urine can certainly be obtained by waiting, but it is not desirable for either the surgeon or the patient that the sitting should be unduly prolonged. There will not be enough urine to float an ordinary urinometer and therefore if the surgeon wishes to know the specific gravity he can get it approximately only by employing a little tube containing three or four glass beads, each one of which is arranged to float in fluid of a certain definite density, and he will also have to be economical of the urine in any tests he may use for albumin or for sugar. But, after all, it is not the presence or absence of albumin, &c., which it is necessary to

determine: what the surgeon actually wants to arrive at is some definite knowledge as to the efficiency, both relative and absolute, of each of the two kidneys.

At the commencement of this paper I alluded to certain methods by which attempts are made to form an opinion as to the degree of efficiency with which the two kidneys are doing their work (the kidneys being regarded as two sides of a single excretory apparatus). I had in my mind (1) the estimation of amount of urea passed; (2) cryoscopy; and (3) the use of methylene blue, and it will be worth while to spend a few moments in considering how these methods can now be applied so as to give us the information we require about each kidney separately.

1. As regards the estimation of urea and its true value as a test of renal efficiency, I must leave this question to be decided by others who are better qualified to form an opinion about it than I am, but as a Little's ureometer appears to give most accurate results and only requires one cubic centimetre of urine for each experiment, this at least will always give us a rapid and easy means of instituting a comparison between our two specimens of urine.

2. "Cryoscopy" is a method which (as applied to the estimation of renal efficiency) has had very great importance attached to it. It depends upon the fact that just as sea water freezes at a lower temperature than fresh water, so in all fluids the freezing point tends to become lowered in proportion as they contain more and more solid matter in solution. Since all fluids have a definite and constant freezing point, and since the lowering of this freezing point due to the amount of matter held in solution depends upon certain well-defined laws, it follows that in the accurate determination of the freezing point of solutions we have a trustworthy index to guide us in forming an opinion as to the quantity of dissolved matters present. In the case of the mixed urines the freezing point is found to vary within the limits of health by as much as a whole degree centigrade (from − 1·0° to − 2·0° C.) Thermometers for cryoscopy are graduated to give accurate readings up to one-tenth of a degree, and as the variation between the freezing points of urines in healthy individuals is so wide advocates of this method of determining the efficiency of the kidneys have been forced to fall back on cryoscopic examination of the blood. The freezing point of the blood appears to be most remarkably constant (so long as the kidneys are doing their work well)—namely, − 0·56° C.; a variation of more than a tenth of a degree on either side of this indicates a more or less serious alteration in the quantity of salts, &c., present in solution; a lowering of the freezing point—that is, to − 0·58° or to − 0·59° C.—would indicate the presence in the blood of an abnormal quantity of salts in solution, due, of course, to the failure on the part of the kidneys properly to eliminate these salts—that is, "renal inefficiency." Used in this way upon the blood cryoscopy seems to be probably one of the most valuable methods which we possess for determining "general" renal efficiency, and though when used on the mixed urines it is not of the same value the method clearly has an altogether new and special usefulness when it is applied to specimens of separated urine in order to determine if possible the relative efficiency of each kidney separately as compared with the other. This was actually done for me by Dr. J. Barr who cryoscoped specimens which I had obtained from the right and left ureters in Case 4 and found, as stated, that there was as much as a whole degree centigrade of difference between their two freezing points. There is another consideration which makes cryoscopy a specially useful test when the surgeon is dealing with small specimens of "separated" urine: only three or four cubic centimetres of fluid are required to give perfectly trustworthy results and when the cryoscopic examination is completed the whole of the fluid is still available for further chemical tests.

3. The methylene blue method as a test of general renal efficiency depends upon the observation that when a definite quantity (say, one grain) is given either hypodermically or by the mouth the urine begins to be coloured within a certain time and the colour continues to be excreted until, in a certain definite time, it has all been eliminated. Any variation in the times in which these changes usually take place, and especially any prolonged delay in the complete elimination of the colour, indicates probably that there is a corresponding diminution in the general renal efficiency. If this method is of any value when the mixed urines are being dealt with it is of the greatest possible value when the urine can be obtained from each kidney separately. A preliminary injection of methylene blue, followed by an intravesical separation which shows the two urines to be stained, the one quite deeply and the other only slightly or not at all, is a very striking experiment; and while it shows incidentally how perfectly the "separation" is effected it clearly demonstrates that the relative excretory powers of the two kidneys are very unequal. That such a result is no dream Dr. Luys's cases and specimens of his which I have seen clearly prove. I have used the methylene-blue method myself several times but up to the present I have not met with a case of such a kind as to provide me with a pair of specimens in which the colour was markedly different on the two sides.

All this is only just touched upon to indicate the general lines along which the "separation of the two urines" should be followed up if the best and fullest results are wished for and to secure all the advantages which this method of examination offers.

It is not in all cases of one-sided kidney disease that a little blood or pus is found coming from one ureter and clear urine from the other; in these the difference between the two specimens is obvious and the inference to be drawn from them is, of course, apparent to all. There are other cases in which differences exist which are no less real because they happen to be less apparent to the eye; and in order to detect such differences the surgeon must make use of appropriate methods. My object in this communication has rather been to draw attention to the fact that by the "intravesical separation of the urines" we now have it in our power to obtain samples of the urines from the right and left kidney. Though this is a procedure which has been in use in the Paris schools for 18 months past and though it now constitutes part of the usual routine examination of renal cases in many of the surgical wards there it has, so far as I am aware, almost entirely escaped the notice and attention of English surgeons.

It is not quite easy to understand why it is that the "separator" of Dr. Luys has not aroused interest earlier in this country, but we are here, perhaps, a little too apt to look upon new instruments of this kind as interesting toys of ingenious construction but probably of no practical value. New instruments of all kinds and for every possible purpose are constantly being submitted to the profession; so many of these are either quite useless or altogether unnecessary that we are naturally inclined, in most cases, to wait and to let the test of time decide in the case of any particular instrument whether or no there is any real and sufficient reason for its existence. In the case of Dr. Luys's "separator" it it may be as well if in this connexion I point out that it has certain limitations and that these must be properly understood if the operator wishes to avoid disappointments; further than this, he must remember that even when he employs it in perfectly suitable cases he must not expect it to do its work by itself, it will never effect a trustworthy separation of the two urines unless it is properly handled with all the care, patience, and attention to detail which any procedure of this kind necessarily requires.

Personally, after very considerable trial of the separator I am convinced that our power of accurate diagnosis in surgical diseases of the kidney has been very greatly advanced by this method; that it has been advanced to as great an extent, perhaps, as our power of accurate diagnosis of bladder affections was advanced by Nitze's introduction of the cystoscope. There can be no greater calamity in surgery than the excision of a kidney when the remaining kidney is either functionally absent or so imperfect that it is incompetent to carry on by itself the work of the body. Feeling, as I am sure all medical men do, that no amount of trouble is too great if by its means we can be reasonably secure against the possibility of such accidents occurring, and admitting that hitherto our powers of accurate diagnosis have been most lamentably deficient, I desire to draw attention to the method which I have described.

Liverpool.

QUEEN'S HOSPITAL, BIRMINGHAM.—According to the annual report of this institution for the year 1903 the number of in-patients treated amounted to 2120 and the out-patients to 28,956. This hospital ministers to the wants of a district containing a population of some 700,000 persons, many patients being received from the county of Warwick and parts of Worcestershire and Staffordshire. The yearly expenditure is over £11,000, the whole of which sum, with the exception of about £1100 received from investments, is dependent upon voluntary offerings and annual subscriptions.

TRAINING OF THE FEEBLE-MINDED.[1]

BY FRANCIS WARNER, M.D., F.R.C.P. LOND.,
PHYSICIAN TO THE LONDON HOSPITAL.

THE study of the best means of training persons feeble-minded but not imbecile, whether children or adults, has attracted much attention of recent years. The subject forms an interesting department of mental science and presents many problems of great importance, some of which have a bearing on general education in higher as well as in the lower conditions of mental status. Mental processes as they occur in the feeble-minded are not altogether unlike in kind to those which may be observed in well developed brains, but each act is slower and more difficult to control, while the impressions produced are less easily connected or combined for useful action or methods of thought. Since the passing of the Elementary Education (Defective and Epileptic Children) Act, 1899, defective children have been admitted to classes of special instruction under many school boards, and a few homes have been provided for the maintenance of adult cases. This is not the opportunity for giving an explanation of the principles of physiology and mental science that are applicable to the culture of feeble-minded brains, but I would urge upon all who are concerned with such cases the necessity of bestowing their powers of observation and thought to the work and devoting their best efforts to the attainment of the ends in view. The elementary methods of training used for imparting mental faculty to feeble-minded children have also been found adaptable to adult cases. Some power of attention must be cultivated; the child may be fidgety, doing nothing he is told to do, wanting to run about, not being easily controlled; the adult is often sullen, apathetic, very slow and inert in all action. In each class the attention is at first most easily cultivated by sight. The pupil must be made to look at things, not only by turning his head but by moving the eyes; this is very necessary in reading and in working sums. Let him follow with his eyes your hand as it moves, holding up a penny or a lighted match, always taking care that his eyes are directed towards it and that they follow the movements made. Control over eye movements gives the teacher the power to make the pupil look at, and therefore to see, objects accurately; he will learn to look at his teacher's mouth when being taught speech, at her hand in finger exercises, at objects of instruction shown or counted, and at the parts of the drawing on the blackboard. By thus training the eye movements control is obtained over certain brain centres through sight. It is an all-important rule in this elementary training to use one kind of control only at a time, by sight, sound, or touch separately; the different classes of impressions produced may then be connected for the mental process of comparison more easily than when an object is simultaneously seen and handled while its name is pronounced. When, during the course of several weeks of educational effort the pupil has been thus trained he will have made some progress in useful action and have advanced one step towards learning to read and to write.

The most educative agent acting on the feeble-brained child under training is the *teacher*—the teacher's body, hands, face, action as seen, and her voice. The pupil who is sufficiently under control to be made to look steadily at his teacher's hand will easily be made to imitate its action, and this may be employed as a means of educating the brain centres that move his hand in producing a series of finger exercises to be employed later in writing and self-helpfulness. Much has been said about training the hand; it should be remembered that it is the pupil's brain we want to educate by impressions received through the hand or, speaking more accurately, through the muscles that move the hand and the fingers—i.e., by muscular sense. When the hands are held out free with the fingers separated they should be on a level with the shoulders, the elbows being straight, the arms parallel to one another, and the wrist, the palm of the hand, and the fingers all in the same plane without any drooping. This balance of the hand should be aimed at before any finger exercise is attempted and repeated after each lesson. The pupil may then be directed to look at the teacher's hand and to imitate its action as the fingers move one at a time or in combinations of two or three; such movements may be either in bending or may be made laterally, the latter being more difficult of exact repetition; exercises in turning the palm upwards and downwards should also be practised. In these imitation movements impressions are made on the brain centres of the pupil by sight. Other exercises may be employed in which passive movements of the child's body control his action. Such exercises may be called "transfer movements." While the pupil's hands are held out take hold of one and explain to him that he is to move the fingers of the other hand in the same way as you move those of the hand which you hold. Thus you control the brain action of the free hand and can observe the accuracy of the movements produced in it. These exercises are very educative.

We want to get full command over the pupil's brain by every means at our disposal. This applies not only to producing activity with movement, and as a result "something done," but also to resting, relaxing, and standing at ease when temporarily unoccupied. Further, in most useful actions you want just some movement made, not movement all over the body. In writing and in sewing the fingers should do the work without stiffness or tension of the muscles in the arms. A feeble-brained child when told to hold out his hands often tends to keep them forward after others have dropped theirs; this is a waste of power. The limbs are often found to be stiff and consequently awkward in action, while the finer movements of the fingers are difficult to obtain. When you take hold of a child's arm, telling him to leave it alone and to let it fall, if his muscles relax you feel the full weight of the limb on your hand. If you attract his attention to something else his muscles are more likely to relax; conversely, if you can bring about this relaxation, which is a change in the action of his brain, you may be better able to get his attention to other matters. This is, I think, specially important in epileptic cases; the power of voluntary rest is as important as volition in activity. Seat a boy on the table with the leg and knee hanging free, tell him to leave it loose, attracting his attention the while, if the foot swings freely you have succeeded in relaxing his muscles and in securing his attention.

When these methods of elementary training have been practised and some proficiency obtained in such exercises as have been described attempts may be made to produce brain action of the kind necessary in the mental process of comparison and judgment. The teacher should proceed stage by stage in preparing the pupil's brain to acquire power for reading and writing and a knowledge of numbers, the use of money, its comparative value in purchasing articles, &c. With this object in view we must largely train by exercise of the muscular sense or feeling of movement and the degree of strain felt, as by weights placed on the open hand. Let the pupil feel the size of objects on the table with his fingers—thus he feels size only, not the weight; again, with the hand open he may feel weights placed on the fingers—then he feels weight only. Subsequently he will learn to compare coins as to size and weight and learn later that the florin buys twice as much tea as the shilling, the value being proportional to the weight. Much good education may be imparted by extending such methods even before the pupil understands much verbal teaching. Lessons in matching coloured papers; experience in feeling two vessels containing hot water of different temperatures; discrimination between loud and soft sounds, all convey impressions to the pupil's brain that may afterwards become classed and associated in acts of comparison and judgment.

The previous training in imitation of action seen in the teacher prepares the pupil to learn to write and to speak with good pronunciation. Having learned to move his hand as he sees his teacher do, writing on the blackboard may be taught. The boy looking at the teacher's hand while writing with chalk as he stands beside her, moves his own in imitation, and so learns to make the letters, while the action necessary in pronouncing vowels and consonants is imitated from her lips. Breathing exercises and care to increase the child's vocabulary do much to aid proper speaking. Knowledge of time as seen by the clock and a practical acquaintance with the time occupied by dressing, meals, walks, &c., should be taught. All details in self-helpfulness should be subjects of school-room teaching where each item may receive separate attention. These young people

[1] A paper read before the National Association for Benefiting the Feeble-minded.

need constant supervision throughout the day and are most happy when employed with drill, marching, drawing, modelling, games, and walks; each occupation finds an appropriate place in their education as well as the particular items in elementary training that have been described. The teacher engaged with this interesting class of pupils will need to make a constant study of each child so that observation may lead to inference of the impressions received by the pupil and their mode of interaction in mental processes. It is very desirable that teachers for these children should have special instruction how to observe a child; what to look at, what to look for, and as to the means of describing what is seen and of drawing inferences as to mental status and action. In every charitable home for the care of the feeble-minded, whether intended for children or adults, some portion of the morning of each day should, I think, be devoted to definite mental training and some member of the staff should receive instruction as to the elementary training of the inmates.

Prince of Wales-terrace, W.

TWO CASES OF

HYPERTROPHIED BREASTS IN THE MALE (GYNÆCOMASTIA).

BY A. WEBB JONES, F.R.C.S. ENG.,
SURGEON TO WOMEN AT THE GOVERNMENT HOSPITAL, ALEXANDRIA;
AND
J. B. CHRISTOPHERSON, M.A., M.D. CANTAB., F.R.C.S. ENG.,
SURGEON TO THE OMDURMAN CIVIL HOSPITAL, KHARTOUM.

ON account of the rarity of the above-mentioned condition we have thought the following two cases worthy of record.

CASE 1.—The patient was a Sudanese boy, aged about 14 years. Both breasts were well developed, firm and elastic to the touch, and in fact presented all the characteristics of the female breast in an individual of the same age (see Fig. 1). Generally the boy was well developed.

FIG. 1.

Showing hypertrophy of the breasts in a boy aged 14 years.

To escape from the chaff of his comrades he was forced constantly to wear a shirt when at work and this indeed was the reason that led him to seek surgical advice. He was admitted into Dongola Civil Hospital where both breasts were removed by a curved incision at the lower periphery, leaving the nipples intact. Microscopical examination (kindly made for us by Mr. S. G. Shattock) showed the following condition: "The increase in size is due mainly to dense (though well-developed) fibrous tissue. But it should be classed as hypertrophy and not elephantiasis or fibrosis, since the number of acini is not less than in the normal female breast. The epithelium is proliferating but there is only here and there evidence of interstitial inflammation. One must regard the breast as hypertrophied and, in addition, the seat of a parenchymatous mastitis."

CASE 2.—The patient was a Fertit boy living at Omdurman, admitted to hospital in February, 1903, presenting a large raw area in the left mammary region and several clean-cut semicircular gashes above the right breast. He had completely amputated his own left breast with the aid of a razor and was proceeding with the same operation on the right side when either he fainted or his courage failed. The right breast, though small, was distinctly feminine in appearance. Like the virgin breast, its outline was clearly marked off from the subcutaneous fat or the pectoral muscle beneath; the outline was slightly concave above and convex below so that the nipple was directed a little upwards and outwards. According to the lad's statement the breasts were increasing in size and he had mutilated himself on account of his resemblance to a woman. Generally he was well developed, as the accompanying reproduction of a photograph (Fig. 2) shows, and was of a muscular, manly type. The left breast was skin-grafted and the right was removed through the incision made by the boy, the nipple being left intact. It enucleated easily except at the nipple. In size it resembled a small Tangerine orange cut through the equator and presented all the naked-eye characters of a female breast.

FIG. 2.

Showing hypertrophy of the breast in a boy.

Although this was not so marked a case of gynæcomastia as in Case 1, it completes the story and emphasises the rarity of the condition in the Anglo-Egyptian Sudan. Men are often seen who have prominent pendulous chest development, either on account of the size of the pectoral muscles—this especially in Sudanese colporteurs—or on account of a local deposit of fat in the mammary region. Such men may call forth the remark that they have breasts like a woman but the breasts are distinct from the condition described above and contain no adenomatous tissue.

It is to be remarked that both lads came from the same tribe (the Firitawi). Rumour says that the condition is not uncommon amongst them and Sir H. Johnstone says that enlarged breasts in the male are not uncommon amongst the negroes of Central Africa. However this may be, both boys were much ashamed of their appearance, a fact which makes it quite clear that, at any rate in the districts in which they were living (Merowi and Omdurman), hypertrophy must be extremely rare. The Firtitawi are a very primitive people and this, so far as it goes, supports Williams's theory that the hypertrophy is a reversion to the condition prevalent when the males aided the females in suckling their young.

A CASE OF ACUTE YELLOW ATROPHY OF THE LIVER.

BY JOHN EDWARDS, M.R.C.S. ENG., L.R.C.P. EDIN.,
MEDICAL OFFICER OF H.M. PRISON, MANCHESTER;
AND
MAURICE HAMBLIN SMITH, M.R.C.S. ENG., L.R.C.P. LOND.,
DEPUTY MEDICAL OFFICER OF H.M. PRISON, MANCHESTER.

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ACUTE yellow atrophy of the liver is so uncommon a disease that the following notes of a case may be of interest.

The patient, a man, aged 47 years, was received into Manchester Prison on May 14th, 1903. There was no special history or evidence of chronic alcoholism and he was in good general health. His height was 5 feet 6 inches and his weight was 152 pounds. He continued in apparently perfect health until Sept. 28th, when he complained of illness. He was found to be suffering from well marked jaundice, for which no cause could be found and which quickly increased in intensity in spite of the exhibition of purgatives, &c. On the morning of Oct. 6th he became delirious, not understanding what was said to him and constantly jumping out of bed. The icterus was intense, the area of liver dulness was markedly diminished, and the area of splenic dulness was somewhat increased. The cardiac and respiratory systems presented no abnormal symptoms or physical signs. The urine contained no abnormal constituents with the exception of a large amount of bile pigment. On the 7th his condition was unchanged except that the area of liver dulness was still further diminished. There had been obstinate constipation for the past four days, so an enema was given which brought away nothing but a small amount of congealed blood. He passed his urine into the bed. A definite diagnosis of acute yellow atrophy of the liver was made. On the 8th the delirium had passed into a condition of coma. He lay breathing stertorously, unable to swallow, and hardly moving a limb. The pupils were contracted. His pulse began to fail at about 6 P.M. and he died at 11.30 P.M., the immediate cause of death being cardiac failure. The temperature had been 98.4° F. all through the illness, only rising on the morning of the day of death to 99°.

A post-mortem examination was made on Oct. 12th. The liver was found to be "flabby" and much contracted in size. It weighed 32¼ ounces. Externally it had a distinct yellow colour and on making sections this yellow colour was still more marked, some parts being of a light yellow and some of a "reddish yellow" or orange colour. The liver substance was not friable. The capsule of the liver was not adherent. The gall-bladder was quite normal. The spleen weighed nine and a half ounces, its capsule was not adherent, and it presented nothing abnormal on making sections. All the remaining viscera appeared to be perfectly normal. A portion of the liver was submitted to Dr. Sheridan Delépine, professor of pathology at the Owens College, Manchester, who kindly furnished us with a report from which the following extracts are taken: "There is evidence of a considerable destruction of liver cells in every part examined. Most of the liver cells which have not broken down are in a state of advanced fatty degeneration. There is a more or less generalised apparent increase of fibrous tissue; this increase is real in the portal region of the lobules, but the predominance of fibrous tissue which is apparent in the hepatic region of some of the lobules is certainly due to the disappearance of liver cells and the closing of the meshes of the capillary network; in other lobules there is some central cirrhosis. Where the liver cells are distinct and not distended with fat they have the characters associated with proliferation due to the irritation of glandular cells—i.e., they are small, resemble duct epithelial cells, and are arranged in narrow columns. In several places there is small-cell infiltration of the newly formed fibrous tissue in the portal zones. No micro-organisms could be detected on staining the sections. No crystals of tyrosin and only a small amount of leucin could be obtained from extracts of small portions of the liver. The microscopical characters are such as would be expected in a case of subacute yellow atrophy of the liver."

There can be no question that this disease is a most uncommon one. Dr. W. Osler[1] mentions that it has never happened to him to see a case and at Guy's Hospital during the 27 years from 1864 to 1890 only 11 cases were met with. The disease is said to be more common in women than in men. Various causes have been assigned, such as great mental emotion, syphilis, and alcoholism; of none of these was there any evidence in this case. The symptoms appear to have been fairly typical except that there was practically no vomiting and that no leucin or tyrosin was found in the urine. The whole duration of the case may be taken definitely as 11 days (from Sept. 28th to Oct. 8th), for not only did the patient make no complaint before the former date but any symptoms of acute illness (especially such a symptom as jaundice) would have at once been noticed and reported by the prison officers. The only disease with which this appears likely to be confounded is phosphorus poisoning and from the nature of the present case (including the length of time the patient had been in confinement before the illness began) this alternative diagnosis would have been impossible.

Manchester.

A CASE OF HYSTERECTOMY FOR CANCER OF THE UTERUS, COEXISTING WITH PREGNANCY.

BY IAN MACDONALD, M.D. PARIS AND EDIN.,
LATE ASSISTANT MEDICAL OFFICER TO THE RIO TINTO CO., SPAIN;
AND
W. A. MACKAY, M.D., F.R.C.S. EDIN.,
CONSULTING SURGEON TO THE RIO TINTO CO., SPAIN.

THE problem presented by the existence of cancer in a pregnant uterus varies with the term of the pregnancy at which the disease is discovered. Before the sixth month total hysterectomy without opening the uterus appears to us to be the best operation. It was, therefore, performed in the following case.

The patient, a multipara, 36 years of age, had been suffering for six years from lumbar pain, profuse leucorrhœa, and dysmenorrhœa, with the passage of large clots at her periods. During the last six months she had menstruated twice every month and in addition had noted on several occasions gushes of a thin stinking fluid. The loss of blood had now become continuous and she had become emaciated so rapidly that she consulted a medical man who diagnosed her condition as cervical cancer but overlooked the co-existing pregnancy.

On examining the abdomen a large tumour was at once evident, reaching up just beyond the umbilicus in the middle line. On palpation it revealed fœtal movements and by auscultation a fœtal heart. The whole vagina was filled by a large fungating mass, beyond which the examining finger reached a ring of apparently healthy cervix except in the left fornix, where a hard band ran outwards along the vaginal roof. With the patient in the horizontal position the abdomen was opened below the umbilicus and the pregnant uterus at once presented. The wound was enlarged upwards and downwards and the uterus was lifted forwards. The upper borders of the broad ligaments which lay perpendicularly were divided between two ligatures outside each ovary and the round ligaments were similarly treated. The patient was now placed in the Trendelenburg position which added to the weight of the uterus pulled the cervical portion well out of the pelvis. By means of a sound we determined the relations of the bladder which lay lower than would have been supposed. Peeling the bladder downwards the uterine arteries were ligatured on both sides and the anterior vaginal fornix was opened on a curved sound. The section of the vagina was carried rapidly round, the wall on the left side being cut well beyond the disease. A few bleeding points in the vaginal wall were secured with catgut; iodoform gauze was passed down the canal from the pelvis and left just showing

[1] Principles and Practice of Medicine, third edition, 1898.

at the level of the divided vagina. The abdominal wall was closed with one layer of fishing gut sutures. The patient made a good recovery which was slightly delayed by some suppuration in the wound from the very foul condition of the cervix. In six weeks she was walking about and now (six months after operation) she is in good health.

Huelva, Spain.

HYPERCHLORHYDRIA.

BY WALTER BROADBENT, M.A., M.D. CANTAB., M.R.C.P. LOND.,
ASSISTANT PHYSICIAN TO THE SUSSEX COUNTY HOSPITAL.

HYPERCHLORHYDRIA is a condition difficult of accurate diagnosis owing to the natural objection which people have to the passing of a stomach tube. During the last two years I have seen 24 cases which presented sufficient of the characteristics of the disease for one to be practically certain of the diagnosis, though in only two cases was the tube passed and in a third some fluid vomited was examined; in these three cases excess of hydrochloric acid was found. Cases of gastric ulcer are not included since, although there is practically always excess of hydrochloric acid, more evidence has been published that the ulcer induces the extra secretion than that the acidity is the cause of the ulcer. The condition was present in rather less than 1 per cent. among my out-patients at the hospital, 2500 in the two years, in 19 males and five females whose ages varied between 28 and 58 years. The most severe case was the following.

The patient was a man, aged 58 years, of sallow complexion, thin, and neurotic. His mother had died insane and his father from phthisis. He had been temperate and not a heavy smoker. He had always enjoyed good health until two years previously when he began to be troubled with abdominal pain which had then no particular relation to meals but was always worse at night. For the last five months the pain had been more frequent and severe and for four months he had often vomited at night large quantities of non-odorous acid fluid very rarely containing any undigested food. Vomiting immediately relieved his pain. He had slept very badly, being kept awake for hours nearly every night. He said that the pain was always preceded by gurgling in the abdomen; it was colicky in character and situated mostly between the margin of the ribs on the left side and the umbilicus; it was relieved somewhat by pressure and was made worse by lying down. He had to sleep in a semi-recumbent position and when awakened by the pain he leant forward over his knees and sometimes rolled about in agony. A good meal always relieved the pain for a time but he had some months previously discovered that afternoon tea caused a quick return of pain and he had discontinued it. Later he had found that a glass or more of milk brought about a cessation of the pain for a longer period than any food or medicine and he had in consequence been drinking a large amount of milk every day. His tongue was small, pointed, with a slight fur on the dorsum. His teeth were good and his appetite was fair. He had no pain for some time after food. There was no flatulence but there were acid water-brash and vomiting frequently at night. His bowels were constipated. The abdomen was thin and soft; there was no tenderness anywhere on palpation. The heart sounds could be heard down to the umbilicus with ease and on shaking a splash was audible from the left sixth intercostal space to two inches below the umbilicus and also for two inches to the right of the middle line. A bell note could also be heard over this area on tapping one coin on another. The liver and spleen were normal; the right kidney was slightly loose. The urine was strongly acid; otherwise it was normal. Fluid withdrawn by the stomach tube was found to contain excess of hydrochloric acid and no lactic acid. The stomach was washed out last thing at night, no undigested food being present. At first an alkaline solution was used but an hour after this the pain was just as bad as ever. After a few nights of this with absolutely no improvement one drachm of tannic acid was added to the last pint of water used in the washing out, with a view to stop further secretion of hydrochloric acid. The effect was excellent, the man sleeping all night without any return of pain. He was kept on a diet mainly of milk and bread and butter, with a little egg and fish added after the improvement caused by the tannic acid lavage. In six weeks' time he was feeling better than he had done for two years and his stomach splash did not extend down to the umbilicus but he continued the lavage for some months.

Of the other cases none of the patients were fat and some were decidedly thin. Four were anæmic and all but two of the others looked sallow and careworn. Two were men who had been invalided out of the army since the South African War for chronic dyspepsia, the extra secretion of gastric juice necessary to digest campaigning fare having apparently persisted. All had pain of an intense character in the left epigastrium described as colicky or boring; in a few it spread to the back. None had any tenderness on deep palpation in the upper abdomen, cases with this tenderness being treated as probably suffering from gastric or duodenal ulcers. In all but three the stomach was small and only in the case related above did it extend below the umbilicus. In one man and one woman there was a moveable right kidney. In all there was more or less constipation. The pain came on from half an hour to two hours after a meal and was usually more severe at night. Soup was most frequently noted as causing a rapid onset of pain; onions, spices, and pickles were also mentioned. In all cases there was more severe pain after a meal containing meat than after one of bread and butter, with fish or eggs added, though some noticed that the pain came on earlier after a small meal. 20 patients said that milk caused practically no pain. 16 complained of heartburn and eructations of acid fluid and six of actual vomiting. Vomiting and eructation of fluid relieved the pain.

It used to be taught that hydrochloric acid given medicinally delayed the secretion of hydrochloric acid; it was tried by way of experiment in two of these cases and caused an earlier onset and aggravation of the pain. Bicarbonate of sodium relieved the pain but only for a short time, when the dose had to be repeated. Probably the carbon dioxide evolved stimulated further secretion of gastric juice. Magnesia was then tried and proved much more permanent in its effects, and its aperient action was useful for the constipation. Magnesia alone not being altogether satisfactory bismuth subnitrate and mucilage were added to allay the sensibility of the mucous membrane and the mixture was taken a quarter of an hour before the expected attack of pain—that is, from a quarter of an hour to an hour after meals—and gave good results. The excellent effects of the tannic acid in the water used for lavage suggested its employment as a medicine, but it did not seem satisfactory owing to the probable formation of tannate of albumin. Belladonna then occurred to me as the most powerful suppressor of secretion and tincture of belladonna added to the magnesia and bismuth subnitrate has given the quickest relief of symptoms.

As regards diet, I have been entirely influenced by the researches of Professor Pawlow[1] who has proved by experiments on dogs: (1) that the more rapidly gastric juice is secreted the greater its acidity; (2) that flesh produces more gastric juice, and that more rapidly, than bread, and that bread produces more gastric juice, and that more rapidly, than an equivalent proteid value of milk; (3) that milk produces no appetite secretion of gastric juice—that is, a secretion caused by smelling, chewing, and swallowing, though the food be not allowed to enter the stomach; and (4) that cream and fat delay the secretion of gastric juice though promoting that of pancreatic juice. He has shown also that the constitution of pancreatic juice and bile is altered to suit a special diet if it is continued long enough but he did not observe any similar change in the gastric juice. It does not, however, from analogy seem correct, as advised by some, to feed a stomach already secreting too much gastric juice on a proteid diet which stimulates constantly this secretion.

The diet ordered was at first milk and cream only; then bread and milk, and soft milk puddings, such as cornflour and florador. Later bread and butter and buttered eggs, which were earlier tolerated than any other form of egg, perhaps because the butter protected the egg till it got into the duodenum, and then fish and, finally, meat. Soup and beef-tea were entirely excluded since they promote secretion of gastric juice without containing the proteid necessary to fix the acid.

Brighton.

[1] The Work of the Digestive Glands, by Professor Pawlow, translated by Dr. W. H. Thompson.

A CASE OF A LARGE UTERINE FIBRO-MYOMA REMOVED FROM A PATIENT POST MORTEM.

BY ALFRED BROWN, M.B., CH.B. EDIN.

THE tumour in question, which weighed 70 pounds and had a circumference of 57½ inches with a diameter of 17 inches, was removed post mortem from the body of a woman who died in the East Suffolk Hospital, Ipswich, aged 54 years. On section the tumour was found to be composed of fibro-myomatous tissue which had undergone some mucoid degeneration. It grew from the left broad ligament and was inclosed in a thick capsule to which the ovary was attached. The peritoneum was firmly adherent all round the growth. In the centre there was a cavity (large enough to hold the clenched fist) which was filled with clear, straw-coloured fluid. The patient, who had only one leg (the leg had been amputated through the thigh in childhood for tuberculous disease of the knee-joint), had been going about three weeks prior to her death. The duration of growth was about 22 years and the patient had consulted a gynæcologist 20 years previously to her death who had told her that she was suffering from a tumour of the uterus but did not recommend operation. The patient enjoyed fairly good health, although she occasionally suffered from severe attacks of dyspnœa, palpitation, severe abdominal pain, and nausea which was relieved by vomiting. The cause of death was bronchitis.

Ipswich.

A Mirror
OF
HOSPITAL PRACTICE,
BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv., Proœmium.

ST. MARY'S HOSPITAL.

A CASE OF HERNIA CEREBRI FOLLOWING COMPOUND DEPRESSED FRACTURE OF THE SKULL; REMOVAL ON TWO SEPARATE OCCASIONS; RECOVERY.

(Under the care of Mr. A. Q. SILCOCK.)

FOR the notes of the case we are indebted to Mr. W. H. Clayton Greene, surgical registrar.

A girl, aged 10 years, was admitted on Oct. 26th to St. Mary's Hospital in an unconscious condition suffering from a compound depressed fracture of the right frontal bone, having fallen from a window into an area eight feet below. She was admitted under the care of Mr. Silcock who has kindly given permission for the case to be published. She was taken to the theatre where the ragged wound somewhat to the outer side of the right frontal eminence was opened up. Two fragments of depressed bone were removed and the wound was thoroughly irrigated. There was a small tear in the dura mater at the lower part of the opening. The scalp wound was partially closed and drained and the patient was sent back to the ward. She remained in a restless unconscious condition during the next few days and on the 29th the wound was found to be suppurating. It was opened up and irrigated and shortly after this the patient regained consciousness. She was, however, very restless and fretful and complained of great pain in the head. On the 31st a protrusion of the brain matter was noticed and this gradually increased in size from day to day, not being accompanied by any special symptoms. On Nov. 6th a leaden plate was fitted over the hernia, a hole being left for drainage, but no appreciable benefit resulted from this treatment, so on the 12th absolute alcohol was freely applied through a tube leading down to the hernia through the dressings. This application had the effect of drying and cleaning the mass but did not affect its size which steadily increased. Pure carbolic acid was tried and this also failed. The hernia at this time (*vide* illustration) was somewhat larger than a Tangerine orange and on Nov. 27th it was removed with a scalpel as there did not appear to be any prospect of its diminishing. Free bleeding accompanied the separation of the tumour from the underlying brain and adrenalin extract, which was applied with the object of checking this, was quite ineffectual. The bleeding eventually stopped after the wound had been firmly dressed with gauze. The operation was performed under anæsthesia and there was

Reproduction of photograph taken in November, 1903, to show the size of the first hernia.

no shock. The portion removed was found to consist almost entirely of œdematous white brain matter covered superficially by a layer of slough and granulations. The patient suffered a considerable amount of pain during the succeeding night and was very restless. On the next morning some degree of left facial paralysis was noticed. The general condition appeared to improve after the operation, but on Nov. 31st the brain was again seen to be protruding through the opening. It was again treated with absolute alcohol and pure carbolic acid and the leaden plate was replaced. In spite of this, however, it steadily increased in size and the discharge was profuse. The general state of the patient continued satisfactory but the hernia attained to, and gradually surpassed, the size of the mass previously removed, so that on Jan. 18th it was decided to attempt its removal once more. Owing to the bleeding which had accompanied the first operation it was removed on the second attempt by a wire loop heated by an electric current. This was drawn slowly across the base of the mass and it was gradually separated without any shock or hæmorrhage. On examination of the specimen it was found, as at the first operation, to consist mainly of white matter, but the sloughs and the granulations were more extensive than on the previous occasion. She again had a great deal of pain on recovering from the anæsthetic, passed a restless night, and on the next morning showed well-marked upper segment facial paralysis. This was accompanied by a spreading œdema of the right side of the face and neck which was not tender and which attained its maximum on the fourth day, after which it gradually subsided and finally disappeared. The further history of the case shows progressive improvement in every respect. There has been no return of the hernia, a leaden plate being kept constantly over the opening which is now covered with healthy granulations over which the epithelium is creeping. The facial weakness has nearly disappeared, the child is in excellent health, shows an active intelligence, and has no signs of moral obliquity.

Remarks by Mr. CLAYTON GREENE.—There are one or two points about this case which call for comment, the first being

that the mass which was removed on each occasion consisted, contrary to what is often stated, of white matter and not simply of septic granulation tissue. Secondly, that the treatment adopted, although departing from that recommended by many authorities, has been eminently successful. All other treatment had absolutely failed even to arrest the process of growth and the fact that the patient is now free from an unsightly and dangerous protrusion must be considered solely due to the removal of the mass and not to the application of various external remedies. Thirdly, that in spite of a loss of a very large amount of the right frontal lobe intelligence is not impaired and, so far as we can judge, no moral change has occurred. Considering, also, the proximity of the anterior cornu of the lateral ventricle it is surprising that it was not injured.

Medical Societies.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

The Surgical Anatomy of the Normal and Enlarged Prostate and the Operation of Prostatectomy.

A MEETING of this society was held on March 22nd, Sir R. DOUGLAS POWELL, Bart., the President, being in the chair.

Mr. J. W. THOMSON WALKER read a paper on the Surgical Anatomy of the Normal and Enlarged Prostate and the Operation of Prostatectomy. He first described the structure of the normal prostate. He said that the sheath of pelvic fascia completely surrounded the prostate except at the apex and the base. The base of the gland was in direct relation to the circular bladder muscle which formed a well-marked sphincter in many cases. The inner longitudinal layer of bladder muscle passed into the wall of the urethra and was reinforced by a band of muscle which passed down from the ureteral wall on each side. The apex of the prostate was surrounded by a circular layer of striped muscle which was continuous below with the constrictor urethræ and passed up between the sheath and the capsule anteriorly and also along the urethra as far as the verumontanum. The prostatic venous plexus was in the form of a Y with a vertical stem which passed up the front of the prostate and horizontal arms which encircled the junction of the prostate and bladder. The veins of the plexus lay between the layers of the sheath and were separated from the capsule by a layer of sheath and also on the front of the prostate by the striped muscle described. The capsule was an integral part of the connective tissue frame-work of the gland. At some parts the gland tubules approached very near the surface. The distribution of gland tissue varied at different levels. The anterior commissure was present in the majority of cases. A bridge of gland tissue united the lateral lobes behind the urethra above and below the ejaculatory ducts. The connexion of the prostate with the urethra was intimate above the verumontanum owing to the ducts of the glands; below this the prostate and urethra were merely in relation to each other. The seminal vesicles lay transversely along the upper border of the prostate and not vertically, as was described. In the enlarged prostate the sheath was much thicker and denser than in the normal prostate. The prostate formed a wedge which separated the seminal vesicles from the bladder base and these organs thus became a posterior relation of the enlarged gland. Nodules pushed through the lumen of the sphincter and dilated it. They then separated the bundles of the internal longitudinal layer and appeared under the mucous membrane. The formation of a distinct lobe in the middle line behind the urethra was attributed to the bands passing from the ureters into the urethral wall. A lobe in this position might arise from the lateral lobes or from the bridge of tissue between them. The part of the prostate most frequently enlarged was that situated above the verumontanum. In a few cases the lower part of the prostate was specially affected. The urethral mucous membrane was dragged up into the bladder and exposed to the urine. The urethra in the extravesical part of the prostate sank backwards until it reached the posterior surfaces of the lobes. This was probably due to the drag of the ejaculatory ducts and the tissues surrounding them. There was a certain amount of outward rotation of the posterior part of each lobe. The capsule became greatly thickened, especially around the upper part of the intravesical portion. Flattened gland tubes were occasionally found in this capsule but there was no formation of a capsule of compressed gland substance. Four specimens of the parts left behind after suprapubic prostatectomy were considered. In these specimens death had occurred from a few hours to ten days after the operation. The prostatic urethra was left behind entirely in one, partly in one, and completely removed in two. The posterior wall of the cavity (from which the prostate had been removed) was formed at the upper part by the seminal vesicles inclosed in recto-vesical fascia. This fascia was continued downwards to form the lower part of this wall. A layer of unstriped muscle was continued downwards from the bladder wall at the upper part of the circumference of the cavity. The lateral walls were formed by the pelvic fascia outside which were the levator ani muscles. The anterior wall consisted of layers of fascia which inclosed between them the vertical part of the prostatic plexus. Around the entrance of the urethra in the floor of the cavity were the fibres of the striped muscle of Henle. A small nodule of prostatic tissue was found adhering to the wall of the cavity. 73 specimens of prostate removed by Mr. P. J. Freyer were discussed. The prostates were divided into those entirely extravesical and those with an intravesical portion. Specimens of these groups were described and also sections cut at right angles to the urethra for microscopic examination. A vertical band of striped muscle was found on the front of one of these specimens and this was shown to be the vertical band of Henle's muscle which lay between the capsule and the sheath. The intravesical portion might equal or greatly exceed the extravesical in bulk. Figures were given showing the origin of the intravesical portion. The prostates were either completely inclosed by a circular capsule or the capsule had been burst open anteriorly at the operation and the two lobes were then only united posteriorly by a hinge of tissue. In a few of the specimens some nodules of prostatic tissue had been left behind. The condition of the urethra in these specimens was as follows: (1) entirely removed with the prostate; (2) completely left behind; and (3) the upper part removed with the prostate and the part below the verumontanum left behind. The last was much the most frequent condition. The confusion of terms denoting the true capsule and the sheath of the prostate was referred to and the nomenclature of Sir Henry Thompson was considered the most practical. The discovery of a nodule of prostatic tissue left behind in a few cases did not vitiate the completeness of the prostatectomy. The real question was not whether a shred of prostatic tissue had been left behind in two or three of over 70 operations, but whether the line of cleavage passed between the prostatic capsule and the sheath or along some plane within the capsule or even within the gland. The material embodied in this investigation supported the contention that the prostate was removed within its capsule and that the sheath was left behind. Recent statements regarding this question had been based upon insufficient evidence and could not be accepted as applying to the operation under consideration. The operation represented by these specimens was a complete prostatectomy and if shreds of prostatic tissue were left behind they were accidents of the operation and not proof of its incompleteness.

Mr. REGINALD HARRISON, after congratulating Mr. Walker on his paper, said that the chief point of discussion was whether the operation was a complete prostatectomy or merely a shelling out of the gland. From examination of his own specimens he had come to the conclusion that they illustrated both varieties. In some the prostate had been completely enucleated while in other cases a very distinct capsule of prostatic tissue had been left behind.

Mr. CUTHBERT S. WALLACE said it was admitted that the normal prostates could not be enucleated, and enucleation was only possibly by the "shaking" loose of the gland by enlargement. He asked how Mr. Walker accounted for the fact that specimens weighing little more than the normal weight were enucleated as easily as large ones. He next dealt with the question whether the operation was a complete prostatectomy. Mr. Walker in one of his specimens had found a small adenoma in the capsule that was left behind and was of the opinion that it was not simply a portion of gland tissue torn from the central adenomatous mass removed at the operation but was a distinct mass of gland tissue

Now the operation performed in this case was called a total prostatectomy, yet there was left behind a distinct encapsuled adenoma. The inference was obvious; the capsule left behind represented part of the prostate, since the adenoma in question could only have arisen from pre-existing gland tissue. Histologically, therefore, the prostatectomy was not complete. In Mr. Walker's own words, "outside the nodule is a well marked layer of tissue which is evidently a portion of the capsule of the prostate." Mr. Wallace next dealt with the question as to how far it was possible to remove large adenomatous masses and to leave the urethra intact. He was of opinion that such was possible when the tumours were small, but with large tumours this was not feasible.

Mr. F. SWINFORD EDWARDS said that in some cases the removal of the prostate was an extracapsular enucleation and in others an intracapsular enucleation. It was found on examination that muscle fibres were present on the outer surface of some of the specimens removed and in such a case the enucleation must have been outside the capsule and within the sheath. The whole question of intra- or extra-capsular enucleation depended on which plane of tissue surrounding the gland was reached. He commented on the great relief afforded to patients by the operation.

Mr. A. PEARCE GOULD alluded to the close connexion between anatomy and surgery and said that it was not until an organ came within the scope of an operating surgeon that many of the finer anatomical points were cleared up. He quite agreed with Mr. Edwards that the question of intra- or extra-capsular enucleation depended on the plane of tissue which was opened. He referred to a case in which he had removed six adenomatous masses in the prostate and yet that was not a "total prostatectomy." Of the value of the operation there could be no doubt.

Mr. J. G. PARDOE said that the difficulty in accepting the view of a complete prostatectomy lay in the fact that there was gland tissue in the capsule. He suggested that the adenomatous tissue of the prostate could rupture the capsule and so come to lie within the plane of that tissue.

Mr. P. J. FREYER said that the question whether the operation was a total prostatectomy or not was one merely of academic interest. He considered that the whole capsule was removed and that a total prostatectomy was performed. He disagreed entirely with the views of Mr. S. G. Shattock and Mr. Wallace and considered that their evidence was based on the examination of insufficient material.

Mr. WALKER replied.

CHELSEA CLINICAL SOCIETY.

Discussion on "Internal Secretion" in Disease and in Treatment

THE adjourned clinical debate of this society was concluded at the Chelsea Dispensary, Manor-street, King's road, London, on March 15th, Dr. T. VINCENT DICKINSON, the President, being in the chair.

Dr. R. T. HEWLETT said that the normal secretion of a gland might be in excess or it might be diminished, or the secretion instead of being normal might be abnormal or perverted and in the latter case might act as a poison, the effect of which would not be neutralised by the normal gland or gland extract. The administration of the gland or gland extract as a therapeutic measure would only be of service when the secretion of the gland in question was diminished or possibly in some cases where it might be perverted. In some cases of exophthalmic goitre there seemed to be a hypertrophy of the gland elements and the administration of thyroid extract rather rendered matters worse than better. In the case of the pituitary body and the suprarenal capsule, acromegaly and Addison's disease, the failure, or comparative failure, of the use of the extracts of the glands in question in those conditions might be due to the fact that the internal secretion was not simply diminished but it might be perverted. The secretion might be entirely altered and act then as a poison which would be in no way neutralised by administration of normal gland substance. With regard to the thyroid gland, there was a point which needed further elucidation—namely, the distinction between the parathyroids and the thyroid proper. Those glands seemed to be distinct from each other, for ablation of the parathyroids seemed to result in acute disorder resembling tetany, becoming rapidly fatal, whilst removal of the thyroid resulted in rather a chronic disorder. With regard to the treatment of cases in which internal secretions were supposed to be diminished it was fortunate that the thyroid gland or extract could be administered by the mouth. Possibly in other cases some simple extracts of the gland could be prepared so that the extract would be in as unaltered a condition as possible and this administered by subcutaneous injection might give better results than by the mouth. There was to be considered also the preparation of anti-sera towards glands and their extracts—an antithyroid serum for disturbance of the thyroid or an anti adrenal serum for disturbances of the suprarenals. The method of preparation of such a serum would be to inoculate animals with unaltered extracts of the glands in question. After a course of treatment the serum of the injected animal acquired anti-properties towards the glands with which it had been injected. Such anti-serum might be of considerable service in cases in which the secretion of the gland was in excess. It might possibly take the place of serious surgical operations, for example. The anti-serum might be expected to neutralise and to destroy the excess of internal secretion, reducing the activity of the gland by destruction of its glandular elements. That mode of treatment had already been applied to some extent at any rate in exophthalmic goitre, and it was stated, with benefit. Experimentally it had been found that anti-sera prepared by injecting animals with extracts of thyroid or the adrenals were possessed of very powerful physiological properties.

Dr. W. HALE WHITE strictly confined himself to clinical and post-mortem points in connexion with internal secretion. Probably at the present moment the internal secretion that was interesting them most was that of the pancreas, and inasmuch as many cases of diabetes had been most carefully examined after death and no change had been found in the pancreas there was a tendency to belittle the pancreas and not perhaps to give it its full share in the production of that disease. To test the matter by post-mortem experience he went through the post-mortem records at Guy's Hospital for a period during which most of the post-mortem examinations had been made before the suggestion had been put forth that the pancreas had to do with diabetes. He took the necropsies from the year 1884 to 1897. The number of necropsies in the hospital was 6708 and the pancreas appeared to the morbid anatomist diseased or injured in 142 instances—that was, in 2 per cent of all the cases dying in a large hospital. When he said it appeared to the morbid anatomist diseased he meant to the naked eye. The most frequent disease met with in those 142 instances was primary malignant disease of the pancreas in 31 instances. But the next many observers would not have expected—namely, that there were no fewer than 26 instances of what the morbid anatomist described as a cirrhotic, congested, or hard pancreas. If those who made post-mortem examinations would look carefully they would find that that was not by any means an uncommon condition and nearly always was found associated with severe backward pressure, usually heart disease, and it was practically the same affection in the pancreas as in the kidney in an ordinary case of mitral regurgitation. Many books on pancreatic disease did not allude to that, though the matter was of some considerable importance, because he had twice known that the pancreas felt during life so hard that the person was thought to be the subject of malignant disease. The next most frequent condition amongst those 142 instances of pancreatic disease was the small atrophic pancreas and there were 19 cases. In some of those 19 pancreases which were described in the words of the morbid anatomist as atrophic the organ only weighed one ounce. No fewer than 16 of these 19 people were found on looking back at the clinical reports and contrasting them with the post-mortem examination to have had diabetes. One patient in whom an atrophic pancreas was described had pancreatic calculi and glycosuria. And by taking the number of fatal cases of diabetes during the same 14 years in the hospital it was found that a quarter of all the patients dying from this disease in a large general hospital had a small atrophic pancreas, so strikingly small that the morbid anatomist, even without making a microscopical section, recorded the pancreas as abnormal before the question had been raised as to whether the organ had anything to do with diabetes. They would notice that he (Dr. Hale White) had said that only 16 had diabetes out of 19. Of the remaining three one was atrophic from a large growth pressing on it; in another the patient was very much wasted from another disease and had no omental fat, so that the wasting of the pancreas might have been part of the general wasting; and the other was a woman who died so soon after admission

that there was no opportunity of examining her urine. She might have had diabetes. Oser fully confirmed that experience of Guy's Hospital, and considered it proved that although one cause at least of diabetes was disease of the pancreas, yet that organ might be perfectly healthy as far as the microscope could discover in cases of diabetes and also the pancreas might be totally destroyed by disease without there being any diabetes. Simple atrophy, Oser said, was by far the commonest disease of the pancreas associated with diabetes. Haussmann, from the Berlin Pathological Institute, found in ten years that they had eight cases of diabetes without pancreatic disease, six without any mention of the pancreas in the post-mortem report, 40 cases with disease of the pancreas, and they had 19 cases in which the pancreas was considerably diseased but there was no diabetes. Among the 40 cases in which, in the Berlin Pathological Institute, they found disease of the pancreas 36 were simple atrophy (practically the same thing as at Guy's Hospital), three were fibrous induration, and one was indeterminate. Both at Berlin and at Guy's Hospital about one third of the people dying from diabetes had pancreatic disease visible to the naked eye. It was a definite characteristic condition of the pancreas—namely, a small atrophic organ, sometimes so wasted that its weight was reduced to one ounce. It was true of course that other diseases of the pancreas might sometimes cause diabetes. It always seemed to him that although this was a distinct step forward it was not a very great step. Disease of the pancreas led to hyperglycæmia but too much importance was attached to that as a symptom of diabetes. With a large amount of sugar passing there was some loss of energy, but this could often be easily compensated. Dr. Hale White quoted the case of a man, whom he saw occasionally, who had passed large amounts of sugar in his urine for 20 years. Another thing which they were liable to forget was that there were so many other metabolic perversions in diabetes. For instance, there was the excess of ammonia, the presence of oxybutyric acid, and other metabolic phenomena. It was rather gratuitous to attach all the importance of diabetes to sugar rather than to those other conditions and, besides, it was not the sugar that killed. Patients died from diabetic coma and it was not the sugar that made the person comatose. He suggested that when they found the pancreas at fault it was only one of many links in a complicated disease. They had only advanced one link further along the chain and there must be many others that they must fit together before they could understand the disease. He pointed out that really under the heading of diabetes nowadays they might be considering many different diseases. Turning to the question of the internal secretion of the organs of generation Dr. Hale White asked whether chlorosis was not a perversion of the internal secretion of the female organs of generation. It was a peculiar disease which was practically confined to women—he was a little sceptical of the diagnosis of chlorosis in men—and which occurred in women at a particular age and which was almost always associated with amenorrhœa. And, as bearing upon that point, he could not help thinking that some perhaps bold operators were a little too inclined to sweep out the pelvic organs in women, because sometimes physicians saw after it was done all the lamentable symptoms, usually mental, which resulted from the operation. The same thing was obvious in all the disordered functions of the menopause. Surely the disordered functions at the menopause suggested that there was something wrong with the internal secretions of the generative organs. Exophthalmic goitre was probably an auto-intoxication from internal secretion of an abnormal gland, and Edmunds had shown that many of the symptoms could be produced in monkeys by feeding them upon large amounts of thyroid extract. But there, again, having got so far they were inclined to think they had got a long way when perhaps they had not got as far as they thought. There were some features about exophthalmic goitre which that would not explain. It was known that any large collection of cases would show an association between it and rheumatic fever. If they took 1000 women who had had rheumatic fever and 1000 women who had not had it, those who had had it were more liable to exophthalmic goitre than those who had not had rheumatic fever. But they had rheumatic fever long before their thyroid went wrong and there was that association to be explained. Then, too, possibly there was a mental association because it was certainly commoner in women and most common in women who were unstable mentally than any other subjects. And there were some other things in connexion with it which required explanation. There was no doubt that exophthalmic goitre was slightly hereditary, which was an interesting point to bear in mind, and the relatives of a person suffering from exophthalmic goitre were liable to have diabetes and that was a well known association. Future research should be directed to show whether it was diabetes proper or merely glycosuria. An interesting fact in connexion with the view that exophthalmic goitre was an auto intoxication from an abnormal thyroid was the undoubted influence of shock. It was well known that enlargement of the gland might exist for 30 years before the exophthalmic goitre developed—an important practical point, because if it was not borne in mind an undiscovered exophthalmic goitre might be operated upon, with usually disastrous results to the patient. Dr. Hale White concluded by saying that he had often when at the bedside wondered whether some of the symptoms of cirrhosis of the liver, for example, swelling of the feet and, in fact, the general illness which those patients got, might not be due to a perverted internal secretion of the liver, and he threw out the suggestion that it was possible that Hodgkin's disease was a perversion of the internal secretion of the lymphatic glands and that was a subject which might be well worth while working out.

Dr. J. ROSE BRADFORD said that they had looked upon an internal secretion as a product of a gland and at the present time the production of antitoxins had not been definitely correlated with the activity of any single gland or, indeed, with any number of glands. The question presented itself as to whether it would be more justifiable to look upon antitoxins as the product of the metabolism of tissues rather than perhaps as the product of metabolism of those particular aggregations of tissues which they talked of as glands. If they restricted their remarks to the internal secretions produced by those aggregations of tissue elements called glands they might look at the question first of all from the physiological side where it perhaps might be permissible to say that their knowledge was more definite at the present time or at any rate in a more concrete form than when dealing with the pathology of the subject. As regards the glands there could be no question that the earliest internal secretions to be recognised were those of the generative glands, and it was interesting with reference to the generative glands to observe the complete confirmation, if such confirmation were wanted, which was afforded by Mr. S. G. Shattock's exact experiments with regard to the different effects produced by castration in animals and those produced by ligature of the vas deferens, particularly his observations conducted on a certain breed of horned sheep in which he showed that the ligature or excision of a portion of the vas deferens in the young male in no way prevented the development of the horns, whereas removal of the whole gland produced, as was well known, both in the case of mammals and birds, the production of a form which was somewhat similar to the female. In the case of the pancreas the present state of their knowledge with regard to the internal secretion of that organ was rather unsatisfactory from the point of view of determining what the exact nature of the product was. Another physiological point was that as regarded internal secretion the glands producing it were glands which apparently sometimes only produced internal secretion and which at other times had an external secretion as well. There was a third group of glands provided with an abundant external secretion where either there was no internal secretion or there was no evidence of one. There were a number of such glands—for instance, the salivary glands—and he presumed that the kidney must also be included amongst them, because although there were various grounds for thinking that the protoplasm of the kidney was in some way concerned with metabolism there was yet, to the best of his belief, no absolutely conclusive proof of the existence of an internal renal secretion. In the case of the thyroid myxœdema had been produced and disease had been arrested and the condition of want of secretion of the colloid material had been found to exist by the anatomical changes which were present in the gland. So that, in the case of myxœdema at any rate, it could be definitely asserted that the disease was undoubtedly due to an arrested internal secretion. It could not be proved that any disease, and exophthalmic goitre amongst others, could be definitely shown to be due to either increased internal secretion or to a perversion. And in the case of exophthalmic goitre the facts were complicated and much

more so than they sometimes thought, owing to the relationship of the parathyroids to the disease. Considering the matter from the negative side, if the whole of the thyroidal tissue was removed and the parathyroids were left, the animal experimented on did not die. The explanation of the survival of a rabbit after thyroidectomy was that the parathyroids did not happen to lie with the thyroid in that animal and hence removal of the thyroid was not followed by death. But Edmunds's experiments on the dog were much more remarkable. He removed both lobes of the thyroid and in some instances all the parathyroidal tissue, with the exception of one portion, and yet the animal survived for very long periods. In the monkey and in man that operation could not be performed, inasmuch as parathyroidal tissue was scattered in the midst of the thyroidal tissue. A still more difficult question with reference to exophthalmic goitre was that the changes which were present in the hypertrophied gland were very closely similar to, if not identical with, those produced by the partial removal of the thyroid. In exophthalmic goitre the hypertrophy or enlargement of the gland—because it was questionable whether it should be called hypertrophy—was of such a character as to produce abnormal tissue resembling parathyroidal tissue, and the same appearance was produced experimentally by the removal of portions of thyroid. Further, the same kind of tissue was produced experimentally in the thyroid by leaving the thyroid alone and removing the parathyroids. They could not possibly accept the view that exophthalmic goitre was due to a mere hypersecretion of the normal thyroid juice, quite apart from the previous fact that the hypertrophied or enlarged gland did not show excess of colloid material. There was, perhaps, something to be said for the view that had been advanced by many—that in exophthalmic goitre what they had to deal with was an enlargement of the gland as a result of some primary failure, or call, or stimulus produced in certain tissues of the body, perhaps the nervous system, but, at any rate, that the enlargement of the gland was secondary and not primary. In considering the pathology of the other ductless glands associated with disease, the suprarenals or pituitary, they were met with the same problem in both cases, that disease of either of those glands was associated in a very special manner with certain definite diseases, Addison's disease and acromegaly. Although it was true that in exceptional cases they might get instances of apparently normal suprarenals in Addison's disease, that was a doubtful argument in medicine and they could prove a great many things by that line of argument. It was difficult to be certain they had not got to deal in cases of that kind with accessory suprarenals. There were many sources of fallacy and he thought all pathologists would agree that there was a definite association between lesions of the suprarenal glands and Addison's disease as there was between the pituitary body and acromegaly. The point of resemblance in those diseases was that in both cases a material was elaborated by the particular gland and in both cases that material would, at any rate, explain some of the symptoms of the disease, although not all. In both diseases all pathologists would agree that the whole mechanism of the disease, or the pathology of it, could not be explained on the hypothesis of the suppression of that internal secretion. With regard to the pancreas in diabetes, recently in America, at Baltimore, he had had the opportunity of seeing some very interesting specimens of pancreas prepared by one of Dr. Osler's assistants showing two forms of fibrosis of the organ, one which was unaccompanied by diabetes and the other which was accompanied by diabetes, and in the latter there was destruction of the islands of Langerhans and in the former there was not. With reference to the point raised by Dr. Rolleston as to the association of two or more ductless glands, that received interesting confirmation in the post-mortem room in the very frequent association of enlargement of the thymus, not only with exophthalmic goitre, but also with Addison's disease. It was not an unusual post-mortem phenomenon in both those diseases, although, of course, not restricted to those two. He emphasised the fact that precisely in those cases where pathology gave rather an uncertain sound, as, for instance, in the explanation of the nature of Addison's disease and in the case of acromegaly, and also to a certain extent in cases of exophthalmic goitre and in the case of pancreatic diabetes, their treatment was unsatisfactory and that their treatment based on internal secretions of materials elaborated by those glands had not been successful. With regard to the heredity of goitre that of course was an undoubted fact and one sometimes saw it in man. He knew a case of father and son who both had exophthalmic goitre, the man at the age of 50 years and the son at 22 years. Dr. Bradford concluded by saying that although a number of observers had described beneficial results in the treatment of certain urinary diseases and even in the treatment of uræmia by the administration of renal extract he thought at the present time, both from the physiological standpoint and from that of pure pathology, that there was no real evidence of the existence of an internal renal secretion and that there was certainly no evidence, to the best of his belief, that treatment from that point of view was in any way beneficial. So that they really came back to the point at which they started—that the one crucial instance where both the physiology and the pathology of the treatment were thoroughly satisfactory was in myxœdema and cretinism.

LIVERPOOL MEDICAL INSTITUTION.

Tuberculous Ulceration treated with Radium Rays.—Malignant Disease treated with the X Rays.—Infantile Mortality and Sterilised Milk.

A MEETING of this society was held on March 17th, Dr. JAMES BARR, the President, being in the chair. Before the commencement of the ordinary business a motion expressing regret on account of the death of Dr. Alexander Davidson was adopted unanimously.

Mr. COLIN CAMPBELL related two cases of Tuberculous Ulceration of the Mouth and of the Pharynx which he had treated with radium rays. The first patient was a young man suffering from advanced phthisis, who also had extensive ulceration of the pharynx and a painful ulcer just inside the mouth. The frequent application of radium rays, which were directed to the ulcerating areas by means of a lead tube, resulted in the healing of the ulcers but the patient ultimately died from phthisis. The second patient was a woman suffering from disease of the frontal sinus and nostril, who also had a tuberculous ulcer between the pillars of the fauces. Radium rays applied for 20 minutes twice daily had been followed by sound healing of the ulcer.

Mr. C. THURSTON HOLLAND read a note on the Value of the X Rays in the Treatment of Malignant Disease. A patient under his care suffered from recurrence of mammary carcinoma involving the skin of the whole of the left breast. Under prolonged x-ray treatment a large spreading ulcer healed entirely and numerous outlying cancerous nodules disappeared. Enlarged glands had since appeared in the axilla and neck but had not appreciably increased in size for some weeks. Mr. Holland said that he had obtained the best results in cases of cutaneous cancer and that deeply seated growths had not responded to the treatment. He suggested, as a preventive measure, that all cases after operation for malignant disease should be treated with the x rays.

Dr. E. W. HOPE read a paper on Infantile Mortality and the Supply of Humanised Sterilised Milk. He quoted from investigations which had been carried on by himself and other members of the society for many years and which showed that amongst artificially fed children below three months of age the mortality in the summer and autumn months from digestive disorders was 15 times as great as it was amongst breast-fed infants, being approximately 300 per 1000 instead of 20 per 1000. He gave some account of the precautions followed in Liverpool with respect both to the milk obtained from cows within the city and also to that brought into the city from the country and he described the methods of sterilising and preparing the milk for the use of infants, this milk being distributed in baskets of nine bottles containing a sufficient supply for 24 hours and no bottle being used twice. This milk was intended solely for infants whose mothers were unable to suckle them or could only partially suckle them. He said, however, that the problem of finding a complete substitute for the milk of a healthy mother had not been solved, and probably never would be solved. As the infant grew there might be variation in the quality of the mother's milk which specially adapted it to the infant's need—niceties in nature which could not be approached artificially. Moreover, milk as nature intended it to be given was never exposed to the air but passed directly from the mammary gland to the stomach.

The staff of the Children's Infirmary and the medical profession throughout Liverpool had given valuable assistance in the supervision of the work. The results had been that 6295 infants had been fed upon this milk up to Dec. 31st, 1903. Careful records relating to 4453 of the total whom it had been more easy to keep under observation than the remainder who had been supplied through dairies, showed a mortality-rate of 78 per 1000; the causes of death presented no peculiarity, being certified to be due to bronchitis, pneumonia, whooping-cough, convulsions, and other conditions of habitual occurrence. Compared with the ordinary infantile mortality of the city this death-rate was extremely favourable. The large number of infants thus supplied had rendered almost impossible so close a medical observation as that, for example, referred to by Professor Budin at the Clinique Tarnier in Paris. There the infants, all of whom had been born in the institution, were under constant medical supervision. In 712 cases quoted by Professor Budin extending over a period of two years the mortality rate was reduced to 36·5 per 1000. These, of course, were selected infants and large numbers of them were only very partially fed by sterilised humanised milk, whereas in the case of those fed from the Liverpool depôts there was no selection and a large proportion were ill to commence with.—Dr. HUBERT ARMSTRONG took exception to the term "humanised" which he feared would be an inducement to mothers to use this modified cow's milk in preference to suckling their children.—Dr. PETER DAVIDSON, Dr. F. W. INMAN, Dr. A. C. RENDLE, and others also took part in the discussion.

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.

Rupture of the Intestine.—Acute Inversion of the Uterus.—Causation of Cancer.—Exhibition of Cases and Specimens.

A MEETING of this society was held on March 4th, Mr. C. RICHARDSON, the President, being in the chair.

Mr. R. LAWFORD KNAGGS reported two cases of Ruptured Bowel. The first patient was a girl, aged 13 years, who had been crushed by portions of a falling wall and on the following day suffered from abdominal pain and signs of peritonitis appeared. 36 hours after the injury a median incision was made. Purulent peritonitis was present. On separating the matted coils of intestine a perforation large enough to admit a pea was found in the small intestine from which bloody fæces were exuding. This portion of the gut was drawn outside and the perforation was subsequently closed. The cleansing of the peritoneum was continued, a collection of fæcal fluid being found in Douglas's pouch and the left kidney pouch being also contaminated. The repaired bowel was placed beneath the wound and gauze drains were employed. The patient made a satisfactory recovery but two years later an abscess pointed at the cicatrix after a week of pain and much foul-smelling pus escaped. It healed in three weeks. The second patient was a man, aged 21 years, who was run over by an omnibus. Next morning there was a dull area in the right lumbar and iliac regions. Exploratory laparotomy revealed a longitudinal rent about one inch long at the junction of the duodenum and jejunum. This was closed after freeing the fourth part of the duodenum. The patient only survived the operation half an hour.—Dr. A. CHRISTY WILSON (Doncaster) related the case of a collier, aged 25 years, who after being struck by a tramcar was admitted into the Doncaster Infirmary on Sept. 9th, 1903. He was then in a very collapsed state and complained of severe pain in his abdomen. On examination no bruising could be found, but on percussion some dulness was noticed in the lower left half of the abdomen and left flank and there was tenderness in the same region. There was very little movement of the abdominal walls in respiration. As the state of collapse was not improved in four hours and as the hepatic dulness was diminished a median incision ten inches in length was made and a rupture large enough to admit the forefinger was found in the ileum. In examining the wound Dr. Wilson saw a tapeworm in the gut and drew out 15 feet of it. A continuous silk suture closed the rupture and Lembert sutures followed. The man made an uneventful recovery.—Mr. WALTER THOMPSON read notes of the case of a patient, aged 20 years, who was admitted into the Leeds General Infirmary on Jan. 14th, 1903, having been kicked on the abdomen 13½ hours previously by a horse. A rupture three-quarters of an inch long was found (in the jejunum probably), with much bruising. The intestine was excised wide of the injury and end-to-end anastomosis was performed. The patient left the infirmary on March 11th.

Dr. E. O. CROFT and Mr. R. MUSCHAMP related a case of Acute Inversion of the Uterus in which reduction by taxis was successfully effected on the eighth day after the labour. The patient had been attended by a midwife and the history suggested that the condition had originated during the third stage of labour.—The PRESIDENT, Dr. JOHN SELKIRK, Dr. J. B. HELLIER, Dr. J. BRAITHWAITE, and Dr. J. E. EDDISON discussed the paper.

Dr. H. J. CAMPBELL after briefly alluding to the various views which were held concerning the Causation of Cancer, gave a short summary of the work of Professor J. B. Farmer, Mr. J. E. S. Moore, and Mr. C. Walker, and of Dr. E. F. Bashford and Dr. J. A. Murray. He then pointed out that the work of these investigators supported the following theory—namely, that the development of cancer was the result of the degenerative reversion of epithelial cells to a germinal type, in association with local conditions that insure abundant nourishment and in the presence of some cell irritant or excitant. He then referred to the fact that the organs most frequently attacked were those where degeneration at the time of the appearance of the disease was, as a rule, normally in progress and where the blood-supply was potentially far in excess of the needs of the inactive tissues.

Cases and pathological specimens were shown by Dr. J. GORDON SHARP, Dr. ADOLPH BRONNER, Dr. JOHN IRVING, Mr. HARRY LITTLEWOOD, Dr. J. STEWART, Dr. A. L. WHITEHEAD, Mr. B. G. A. MOYNIHAN, Dr. J. B. HELLIER, Dr. E. F. TREVELYAN, Dr. THOMAS CHURTON, and Dr. A. G. BARNS.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

MEDICAL SECTION.

Milk.

A MEETING of this section was held on March 4th, Sir JOHN W. MOORE being in the chair.

Dr. WALTER G. SMITH read a paper upon Milk and demonstrated some chemical tests which had been recently proposed. A curious fact in regard to the composition of milk was the presence in it, in measurable amount, of citric acid which might be considered a specific product of the mammary gland. It had been shown that cow's milk contained from one to three times as much citric acid as human milk and the amount might be reckoned as equivalent to about 0·25 per cent. of calcium citrate. Calcium citrate being less soluble in hot than in cold milk some was removed in the scum of boiled milk. To distinguish between human and bovine milk a simple test had been advanced by Unikoff of St. Petersburg. It consisted merely in treating the milk with half its volume of ordinary liquor ammoniæ and keeping the mixture at a temperature of 60° C. for about 20 minutes. Human milk assumed a violet-red colour, the shade being deeper according to the stage of the puerperium at which the milk was tested. Cow's milk turned faintly yellow. This test was valid and satisfactory. Mr. Saul had proposed a test to distinguish raw milk from scalded or boiled milk. To ten cubic centimetres of milk was added 1 per cent. of a recently prepared aqueous solution of "ortol" (used in photography) and then one or two drops of a solution of peroxide of hydrogen were added. A vivid deep red colour was produced. Boiled milk was unaffected. To detect formaldehyde added to milk as a preservative a simple test had been proposed by Manget and Marion. A few crystals of "amidol" (another photographic developer) were sprinkled on the milk, slightly diluted. Fresh milk quickly assumed a pink or salmon colour. Milk which contained a very small trace of formaldehyde slowly assumed a canary-yellow colour.

Dr. W. LANGFORD SYMES directed attention to the futility of giving lime to children as a therapeutic measure. The only use of lime added to cow's milk was to modify the physical properties of the curd in the stomach. Too little was absorbed from the digestive tract to render lime of use in

treating rickets. He also expressed the opinion that a diet of sterilised milk was capable of producing rickets and scurvy in children.

BRITISH LARYNGOLOGICAL, RHINOLOGICAL, AND OTOLOGICAL ASSOCIATION.—A meeting of this society was held on March 11th at the rooms of the Medical Society of London, Mr. John Bark, the President, being in the chair.—The President delivered his Presidential Address.—Dr. Frederick Spicer showed a Laryngeal Case for diagnosis in which there had been a gradual loss of voice but neither a tuberculous nor a syphilitic history. A tumour was visible in the larynx. There was improvement under iodide of potassium.—Dr. R. H. Woods advised that tubercle bacilli should be carefully examined for as in a similar case they had been found.—Mr. Mayo Collier suggested that the case was one of syphilis but said he would first examine the sputum for tubercle bacilli.—Dr. Woods showed a skiagram of a Maxillary Antrum containing a piece of indiarubber drainage-tube which had been retained after an operation eight years before. He also showed an Artificial Denture removed from the gullet of a woman where it had remained for four months. There was now a fistula between the œsophagus and the trachea at the level of the cricoid cartilage. Œsophagotomy was performed for the removal of the denture but the fistula still remained.—Dr. J. Dundas Grant suggested that a large tracheal incision would be a good method of reaching the fistula. A case had been reported where success was attained by means of a tracheotomy tube with a jacket of indiarubber, this being maintained in position for one year.—The President said that the case was a very interesting one and that he had never seen one like it.—Dr. V. H. Wyatt Wingrave showed microscopic specimens illustrating recent histological investigations respecting malignant growths. Two forms of cancer parasites were exhibited—parasites free and encapsuled; these had been found in innocent as well as in malignant tumours.—Mr. St. George C. Reid exhibited a small Audiometer for testing the auditory appreciation in deafness and ear disease. Up to the present the method of testing by striking a tuning-fork had been at the moment inefficient and for reference or further testing useless. The important points in this instrument were: (1) the force starting the fork was constant both for one and for every fork, therefore there was never variation in volume in the same fork; (2) the individual fork was constant for one and the same patient and for every other patient at any time; therefore the record was a valuable reference in a patient's history or for comparison and as noting the value of any medical or surgical treatment or appliance; and (3) the fork was heard by the patient and the operator at the same time and it was heard under the same condition. After some experiments it had been found advisable to keep the box at this size for one, two, three, or four forks, considering the question of vibration. For whilst, on the one hand they did not wish unduly to lengthen the period of vibration, on the other hand they did not want to diminish it too much. The forks could be chosen by the surgeon, the C fork being the usual one supplied. The terminals were of glass, which could be removed after each patient and dropped into an antiseptic solution and replaced by fresh ones. It might be added that the instrument was a valuable assistant to the operator should he be suffering from temporary deafness due to catarrh, as the volume of the fork never altered and the normal period of appreciation being known his subjective condition did not prevent the correct determination of the patient's time of audition. There was no objection to variation in the length of the tubes.—A discussion took place and Mr. Reid, in reply to various objections, said that there was no bone conduction whatever in using this audiometer. The spring had not been found appreciably to lessen in strength. Over-tones were not of any importance as they were constant, being always started with the same force and in the same manner.—Dr. Dundas Grant, in opening the adjourned discussion on Mr. Mayo Collier's paper on Latent or Intermittent Nasal Obstruction, said that he could not agree that the subject had not been noticed before by rhinologists, as it was discussed at the meeting of the British Medical Association in 1883. The effect of nasal obstruction on the ear was still a disputed point. The part that negative pressure played was still in doubt. Dr. R. H. Scanes Spicer's investigations were mentioned. Dr. StClair Thomson's researches with reference to the arachnoid fluid were also mentioned. Typical sclerosis of the ear must be placed in a separate chapter as nasal obstruction had no effect on this condition. The hollow groove on the nasal septum was not, in Dr. Dundas Grant's opinion, always produced by the engorged inferior turbinal. The groove was often more apparent than real, a well developed Jacobson's cartilage accounting for this in some cases. The treatment upon which he relied in many cases was galvano-cautery puncture. High-frequency currents might be useful for intra-nasal vascular dilatation.—Dr. Woods said that he doubted the effect of nasal obstruction on ear pressure as the Eustachian tube was a closed tube except during swallowing.—The discussion will be continued at the next meeting. The annual dinner was held at the Imperial Restaurant on the same evening.

NORTH LONDON MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on March 10th.—Dr. S. E. Dore demonstrated a series of eight cases of Lupus treated by the Finsen Light and the X Rays. Seven of the patients had suffered from extensive lupus vulgaris of one or both sides of the face and had undergone almost every known form of treatment, two of the cases including injections of tuberculin and 30 to 40 scraping operations. In one case in which there had been no recurrence in a small patch on the cheek for more than a year, there was a recent development of lupus on the upper lip. Although all the cases showed results which as regarded excellence of scar could not have been obtained by any other method, the treatment had not conferred any immunity from relapse. The majority of cases showed signs of recurrence at periods varying from a few months to a year or more after treatment and permanent results had only been obtained in early cases of small extent. Many of the patients had been under more or less continuous treatment for two and three years. The x rays were employed for the mucous membranes when required. They had also been found useful as a preliminary to the Finsen light in extensive cases but the production of dilated vessels in the scar—exemplified in two of the cases exhibited—was a disadvantage of this method. The x rays alone could not be relied upon to eradicate the final remnants of the disease. In cases of deep-seated lupus or when nodules were imbedded in dense cicatricial tissue the ordinary method of applying the Finsen light to a different area each day had proved insufficient but repeated applications to the same area although painful had been attended with success and seemed to give more likelihood of permanent results. This method was now employed in all suitable cases. Pyrogallic acid ointment was also used to remove the superficial layers of the skin preparatory to the application of the light. A case of rodent ulcer affecting the cheek and angle of the mouth was shown in which healing had resulted from the x rays but recurrence had taken place inside the mouth in the mucous membrane on the under surface of the lower lip. This part was inaccessible to the direct action of the rays and their external application had had very little effect on the mucous membrane opposed to the skin surface. It was pointed out that there was apparently little to be expected from the action of the x rays on deep seated tissues. In the present instance radium was being applied and much of the induration had disappeared and the ulcer was healing. In spite of the obvious disadvantages of the Finsen method, the chief of which was its long duration, it seemed, on the whole, to give the best results in lupus vulgaris. It should, however, be combined with other measures as far as possible. Dr. Dore's experience of the treatment dated from nearly four years ago when it was first introduced into this country by Mr. Malcolm Morris, in conjunction with whom the cases had been treated. Possibly the extreme length of time required in extensive cases might be lessened by the preliminary employment of surgical measures followed by the use of the Roentgen and Finsen rays. Dr. Dore then dealt briefly with the theoretical points connected with these forms of treatment. A discussion followed.

BRISTOL MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on March 9th, Mr. J. Paul Bush, the President, being in the chair. The following cases, specimens, and lantern slides were shown:—Mr. James Taylor: A series of lantern slides illustrating the value of the X Rays in the Diagnosis of Colles's Fracture.—The President: Lantern slides of Skiagraphs of Some Fractures and Dislocations.—Dr. Newman Neild and Dr. Theodore Fisher: Lantern slides illustrating a case of Congenital Hypertrophic Stenosis of the Pylorus.—Dr. E. C. Williams: (1) A case of Acquired Syphilis in a child aged two years; (2) a case of Argyria; and (3) a case of Graves's Disease in a girl aged

12 years.—Dr. P. Watson Williams: (1) A case of Incipient Paralysis Agitans; (2) Frontal Sinus Empyema and Ethmoidal Cell Disease successfully treated by Intranasal Methods; (3) a case of Intralaryngeal Fibroma; and (4) a case of Laryngeal Tuberculosis successfully treated by Submucous Injections.—Dr. W. Kenneth Wills: (1) A case of Lupus Hypertrophicus after Light Treatment; (2) a case of Keloid after the X Rays; and (3) a case of Recurrent Carcinomatous Nodules relieved by the X Rays.—Mr. A. W. Prichard: (1) A case of Dislocation of the Lens with Coloboma of the Choroid; and (2) a case of Cysticercus of the Vitreous.—Mr. F. R Cross: (1) Three cases of Paralysis of the Third Cranial Nerve; (2) three cases of Glaucoma; (3) a case of operation for Double Ptosis; (4) a case of Retinitis Proliferans; and (5) a case of Astigmatism with very high cylinder lens.—Dr. Clements Hailes: A case of Traumatic Sclero-Choroiditis.—Dr. R G. P. Lansdown: A case of Nævus of the Leg.—Dr. J. Lacy Firth: A case of Cancer of the Tongue.—Mr. T. Carwardine: (1) A patient after Gastro Jejunostomy for Pyloric Stenosis; (2) a patient after operation for Cerebral Abscess; and (3) a patient after Operation for Lateral Sinus Thrombosis. Mr. H W. Kendall: A Strangulated Ovary in a Hernial Sac of an infant.—Mr. H. F. Mole: (1) A Gangrenous Ovary and Fallopian Tube removed from a Hernial Sac of an infant; (2) a Prostate removed by Freyer's Method; and (3) a case showing Healing of a Large Perforation of the Membrana Tympani with Calcareous Deposit.—Dr. E W. Hey Groves: (1) A case of Chancre of the Tongue; (2) a case of old Unreduced Dislocation of the Head of the Radius; (3) a case of Excision of the Clavicle; (4) a specimen of Carcinoma of the Rectum; and (5) Gall-stones from a man aged 26 years.—Dr. Neild: A case of Acromegaly.—Dr. W. H C. Newnham: (1) A Fibroid Uterus with Pyometra; and (2) a Tubo-ovarian Abscess.—Dr G. Parker: (1) A case of Congenital Heart Disease; and (2) cases of Injury to the Upper Extremity with Lesions of the Brachial Plexus.—Dr. A. Ogilvy: A case of Transposition of the Viscera.—Mr. A. L Flemming: A case of Cervical Ribs (with skiagraph).—Mr. J. J. S. Lucas: (1) A specimen of Cancer of the Œsophagus simulating an Aneurysm; and (2) Multiple Growths in the Intestine with microscopic sections.—Mr. G. Munro Smith: A photograph of Symmetrical Abscesses in the Calves causing an appearance simulating Pseudo-Hypertrophic Paralysis.—Dr. H. Waldo: (1) Two cases of Lupus Vulgaris of the Face in which no result had followed prolonged light treatment; (2) a case of Lichen Ruber Planus of the Neck and Perineum; (3) a case of Universal Alopecia; (4) a case of Adenoma Sebaceum of the Face; (5) a case of Pityriasis Rubra (Dermatitis Exfoliativa); (6) a case of Disseminated Sclerosis; and (7) a case of Mitral Stenosis with Presystolic and Tricuspid Systolic Murmurs.—Dr. F. H Edgeworth: A case of Tuberculous Disease followed by Osteo arthritis.—Mr. C. H. Walker: A case of Chronic Ulcerative Conjunctivitis (? tuberculous) in a boy aged 16 years.

GLASGOW OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.—A meeting of this society was held on March 9th, Dr. J. Nigel Stark, the President, being in the chair.—Dr. G. Balfour Marshall read a paper on Intraperitoneal Hæmorrhage and Hæmatocele arising from Tubal Abortion or Rupture, with illustrative cases. Dr. Marshall emphasised the necessity for early diagnosis in cases of tubal abortion and more especially in cases of tubal rupture. In some cases the patient had the ordinary subjective signs of an early uterine pregnancy and was unaware that anything was wrong until seized with sudden pain in the lower abdomen. The usual symptoms in more than half of all the cases of tubal gestation were irregular uterine hæmorrhage with cramp-like pains in one or other iliac region. Tubal abortion was much commoner than tubal rupture. As to the cause of tubal abortion, the glandless tubal mucosa hypertrophied only slightly and did not form a decidua such as is found in the uterus. The trophoblast and chorionic villi of the growing ovum readily perforated this thin layer and opened into the enlarged tubal vessels. This gave rise to hæmorrhage which partially or completely separated the ovum and ended, in the majority of cases, in an incomplete or complete tubal abortion between the fourth and twelfth weeks. As to the cause of tubal rupture, the tube might rupture spontaneously as the result of perforation of the wall by the growing villi, from sudden distension by hæmorrhage, or from violence. Schroeder explained the formation of hæmatocele in two ways: 1. The pelvic cavity had previously been shut off from above by adhesions. 2. A quantity of blood escaped into Douglas's pouch, irritated the peritoneum, and formed adhesions among the bowels above. The latter was the most generally accepted explanation. The symptoms of intraperitoneal hæmorrhage, free and encysted, were then enumerated. If expectant treatment was adopted the mass gradually became hard, nodular, and less sensitive. It might take months to absorb, during which the patient was an invalid. The uterus ultimately became densely adherent to the rectum and posterior pelvic wall. In reference to treatment, it was generally accepted that an ectopic pregnancy as soon as it was diagnosed should be removed. There was, however, a difference of opinion as to whether expectant or operative treatment should be adopted when a hæmatocele had formed. If seen at the onset of intraperitoneal hæmorrhage operation should be performed at once as all cases could not be expected to end in hæmatocele. If the hæmatocele was large it should be operated on whether seen recently or some weeks later, as to leave such a case to nature was to condemn the patient to a very prolonged period of invalidism with the formation of dense adhesions. If operation was performed it should be by abdominal section. The affected tube or tubes, all blood clot, and as much as possible of the fibrinous sac should be removed. Drainage, if necessary, was best carried out by the vagina.

GLASGOW PATHOLOGICAL AND CLINICAL SOCIETY.—A meeting of this society was held on March 14th, Mr. A. E. Maylard, the President, being in the chair.—Dr. A. N. McGregor showed a specimen of Amputation Neuromata which he had removed from a stump nine years old on account of pain and tingling sensations. These symptoms did not develop until eight years after the original amputation. He also exhibited a case of Venous Nævus of the Thigh treated by Subcutaneous Ligature; the patient had been shown at a meeting of the society on Oct. 12th, 1903, and was now practically well. Dr. McGregor also exhibited a case of Varicosity and Anastomosis of the Superficial Epigastric Veins following Post-typhoid Thrombosis. The left vein was ligatured at the saphenous opening. No untoward consequences resulted, the anastomosis had been abolished, the varicosity had been very sensibly reduced, and the patient had been much relieved.—Dr. J. Crawford Renton showed a patient who had suffered from Paralysis of the Right Side of the Face for three years in consequence of mastoid disease. The mastoid was opened and cleared out. Dr. Renton had proposed to try to restore the functions of the facial muscles by grafting the facial into the spinal accessory nerve, but this proved unnecessary, for within about a month of the mastoid operation the functions had reappeared and the patient had now completely recovered from the paralysis which had apparently been due simply to pressure by the inflammatory products in the mastoid or middle ear. Dr. Renton also showed a case of Kraske's Operation, the patient being a female, aged 35 years. In the middle of the rectum there was a carcinoma which was moveable and limited in extent. It was readily exposed and removed and the two ends of the rectum were stitched together. The anus was not touched. There had resulted a practical *restitutio ad integrum*. The patient was now (ten months after the operation) in perfect health. The case was a typically good one for the operation and the result had been perfect.—The President described a case of Gunshot Wound of the Abdomen, the bullet of a small Martini rifle having entered a little above, and to the left of, the umbilicus. There was evidence of internal hæmorrhage. Laparotomy was performed. The bowel had escaped perforation, but there were three holes in the mesentery, in one of which an artery of considerable size had been severed. This was secured and the patient made a good recovery.

NORTH OF ENGLAND OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.—A meeting of this society was held at Sheffield on Feb. 19th, Dr. W. J. Sinclair, the President, being in the chair.—Dr. Arnold W. W. Lea related a case of Fibro-myoma Uteri treated by abdominal hysterectomy. The patient was a sterile married woman, aged 44 years, with a history of two years' menorrhagia. Her heart was hypertrophied and dilated and a thrill and a systolic murmur over the apex beat were present. Dr. Lea also read notes of a case of Infected Myoma of the Uterus with Severe Toxæmia treated by abdominal hysterectomy. The patient was married, sterile, and 44 years of age. There was an offensive discharge from the uterus and for ten years there had been menorrhagia. Both patients made good

recoveries.—Dr. J. E. Gemmell read notes of a case of Amenorrhœa associated with Serious Eye Symptoms. The patient was a schoolgirl, aged 16 years, in whose right eye severe hæmorrhage occurred, leading to total blindness and absence of fundal reflex; some hæmorrhage also occurred into the left eye, leading to slight interference with vision. All the usual causes of amenorrhœa were absent; there was no abnormal condition of the blood or renal disorder. The condition seemed to be due to change from home to boarding-school life, hard mental work, and want of exercise. Dr. Gemmell said that gynæcological literature did not refer to eye changes associated with menstruation or menstrual irregularities, whereas every work on ophthalmic surgery pointed out the intimate reflex relationship between the female reproductive system and the eye. The prognosis from the ophthalmic point of view was grave.—Mr. Percival E. Barber related a case of Encysted Perimetritis. The patient was a married woman, aged 34 years, the last of whose nine children had been born nine months previously. On laparotomy being performed the pelvis was found to be occupied by a tense, rounded, elastic tumour which was so shut off by adhesions as to be practically extraperitoneal. The abdomen was therefore closed and the cystic collection was opened per vaginam, a large quantity of clear serous fluid and a lump of coagulated lymph escaping. No pathological changes in the uterus or appendages could be discovered.—The case was discussed by Dr. D. Lloyd Roberts, Dr. A. Donald, Dr. Lea, and the President.

ROCHDALE AND DISTRICT MEDICAL SOCIETY.—A meeting of this society was held on March 3rd.—Dr. J. A. Menzies read a paper on Remedies used in Ophthalmic Work, with special reference to silver nitrate, protargol, adrenalin, and dionin.—Mr. H. H. I. Hitchon read notes of an unusual case of Intestinal Obstruction. A stout woman, aged 60 years, had suffered 15 months previously from pain in the right shoulder-blade, radiating towards the right hypochondriac region, with vomiting but no abdominal tenderness. She had had occasional glycosuria. The evacuations were usually very free. On Dec. 24th, 1903, she was suddenly seized with severe pain all over the abdomen. There were considerable distension and some tenderness on the left side. There were nausea and vomiting, and after the onset of the attack there were two good motions. An enema was administered and was followed by a fair motion. On the next day the pain, distension, and vomiting continued, and neither motion nor flatus was passed. On rectal examination the bowel was empty. The same evening the vomit had a fæcal odour; the temperature was 100° F., the pulse was 104, full and strong, and there was no anxious appearance. The symptoms and obstruction continued with great thirst and fæcal vomiting till the seventh day, when the vomiting diminished and flatus was passed. Mr. Herbert Lund had seen the patient in consultation on the fourth day and had suggested the possibility of a large gall-stone having ulcerated into the intestine and caused the obstruction. Operation was decided against at that time because of the good pulse, the absence of anxious expression and of localising symptoms, and also because the patient was not a very suitable subject for operation. One grain each of calomel and Dover's powder was given every hour from the fourth day. On the seventh day flatus was passed, on the eighth day a liquid motion, and on the ninth day a large gall-stone measuring four inches in its greatest circumference. From this time recovery was uninterrupted. There had been no previous attacks of hepatic colic and no symptom suggesting local peritonitis in the neighbourhood of the gall-bladder.

MIDLAND MEDICAL SOCIETY.—A meeting of this society was held at the Medical Institute, Birmingham, on March 2nd, Dr. Robert Saundby being in the chair.—Mr. Albert Lucas showed a man, aged 51 years, who was admitted to the Birmingham General Hospital on Nov. 14th with a large swelling of the right shoulder caused by a fall while mounting a tramcar. The pulse could not be felt at the wrist. On Nov. 15th under an anæsthetic the subclavian artery was exposed in its third part and a stout loop of catgut was passed round it. The artery was then compressed by the finger against the loop. An incision was then made from just below the middle of the clavicle through the pectoralis major into the axilla, following the line of the axillary artery. The artery was found torn through just below the level of the coracoid process; the ends were freed and ligatured with catgut. A quantity of clot was removed from beneath the deltoid and from the axilla. The pectoralis major was sutured and the wounds were closed. The man made a good recovery and had now almost as good an arm as before. At first there was complete paralysis of the arm but this had now cleared up. No pulsation could yet be felt in the vessels of the arm. Mr. Lucas laid great stress on the advantage in these cases of a temporary ligature on the subclavian artery.—Dr. J. G. Emanuel showed a case of Right Hemianopia in a man, aged 51 years, who was the subject of chronic nephritis. The perimeter tracing exhibited complete right homonymous hemianopia with a peripheral contraction of the left fields of about 15°. Dr. Emanuel was of opinion that when the patient had a "stroke" 18 months previously there was a hæmorrhage into the posterior limb of the right internal capsule and that the attack eight months previously was due to a second hæmorrhage into the extreme posterior limb of the left internal capsule.—Mr. George Heaton read a paper on the Diagnosis and Treatment of the Intracranial Complications of Middle-ear Disease and showed three patients upon whom he had operated for such complications.

ÆSCULAPIAN SOCIETY.—A meeting of this society was held on March 18th, Dr. Leslie Durno, the President, being in the chair.—A case of Arsenical Pigmented Horny Patches on the Knees and Elbows was shown following the taking of Fowler's solution in fifteen-minim doses three times a day by a girl aged 12 years. She had no patellar reflex.—Dr. W. Langdon Brown showed a boy, aged 14 years, who when "five years old lost power in the left arm with wasting of it." At 13 years the wasting was progressive. The pectoralis major, deltoid, and supra- and infra-spinati were absent. The interossei and lumbricales of the left side gave no response to the faradic or galvanic current. The diagnosis was anterior poliomyelitis of the fifth and sixth nuclei. The right shoulder muscles were now growing weak.—Dr. Langdon Brown also showed a specimen of Basic Meningitis from a boy, aged eight years, who had been ill for three weeks with headache and persistent vomiting. Nine days before death he was unable to speak and lost the power to swallow; he knew what was said to him. From the spinal fluid withdrawn through a lumbar puncture a diplococcus was detected that was not intracellular. The rarity of pharyngeal palsy in such cases was noted.—Dr. T. G. Stevens read a paper on the Causes and Treatment of Abortion. In the fully discussed pathology of abortion he pointed out that endarteritis of the chorionic villi was the cause of abortion due to syphilis, while many of the early abortions in the recently married were due to a congenitally retroverted uterus. This displaced uterus could safely be left alone until a single period had been missed when it should be correctly placed and a ring pessary used to retain that position.

BRITISH BALNEOLOGICAL AND CLIMATOLOGICAL SOCIETY.—A meeting of this society was held on March 3rd, Dr. Alfred F. Street (Westgate), the President, being in the chair.—Dr. Leonard L. B. Williams read a paper on Some Aspects of Obesity. The principal portion of the paper was occupied in discussing the causes of insufficient metabolism and the best means for their removal. Under this head a great point was made of excessive and unsuitable clothing and of the fear of chills which invariably led to insufficient ventilation. On the subject of clothing the prevalent custom of wearing flannel and woollen garments next the skin was attacked. The Spa treatment of the condition was considered and it was pointed out that the efficacy of this treatment was due not to any specific effect of any particular waters but to the general management of the case by the Spa physician which was rendered possible by the willingness of patients to undergo restrictions at health resorts to which they would never submit at home.—A discussion followed which was adjourned till April 14th.

ROYAL INSTITUTION.—The Friday evening meetings at the Royal Institution will be resumed on April 15th, when a discourse will be delivered on Korea and the Koreans. The other lectures to be delivered after Easter include three by Professor L. C. Miall on the Transformations of Animals, three by Professor James Dewar on Dissociation, and two by Sir Martin Conway on Spitzbergen in the Seventeenth Century.

Reviews and Notices of Books.

Scientific Memoirs by Officers of the Medical and Sanitary Departments of the Government of India. New Series. No. 7. Some Observations on the Poison of the Banded Krait (Bungarus fasciatus). By Captain GEORGE LAMB, M.D. Glasg., I.M.S. Calcutta: Office of the Superintendent of Government Printing, India. 1904. Pp. 32. Price 8 annas or 9*d*.

Captain Lamb writes that it is evident that snake venoms, even the poisons of allied species, will probably differ markedly, if not entirely, from one another in physiological action and that it is necessary to study the action of each venom separately. The main conclusions to be drawn from the observations now published may be summarised as follows: 1. Cases of intoxication with the venom of bungarus fasciatus can be divided into three classes: (*a*) cases in which rapid death due to intravascular thrombosis follows intravenous injection of large quantities of venom; (*b*) cases which present acute nervous symptoms and which terminate fatally within two or three days after the injection of the poison (these cases are indistinguishable, so far as symptoms are concerned, from cases of cobra venom intoxication); and (*c*) cases which run a chronic course and end fatally between the sixth and the twelfth day after the injection of the poison. The third class of cases are peculiar to intoxication with this venom and present marked special symptoms: a histological examination of the nervous system in these cases shows a well-marked primary degeneration of the cells of the central nervous system. 2. The venom of bungarus fasciatus has an action on the blood plasma in vivo. Injected directly into the blood stream in considerable quantity it produces an increase of the blood coagulability which may end in a fatal intravascular thrombosis. In the more or less chronic cases of intoxication there is a deficiency in the blood coagulability but the deficiency cannot be said to be a factor in the etiology of any symptoms observed. No definite results were obtained with citrated plasma in vitro. 3. The venom of the bungarus fasciatus has only a slight destructive action on the blood corpuscles. This action is of little or no account so far as the production of symptoms is concerned. 4. The venom of bungarus fasciatus is much less toxic than the poison of the cobra or of that of the daboia. 5. The venom of bungarus fasciatus is not neutralised either by the serum prepared by Dr. Calmette of Lille or by a serum prepared by Dr. F. Tidswell of Sydney with the poison of another colubrine snake—namely, hoplocephalus curtus.

The Treatment of Certain Malignant Growths by Excision of the External Carotids. By ROBERT H. M. DAWBARN, M.D. The Samuel D. Gross Prize Essay. Philadelphia: F. A. Davis Company. 1903 Pp. xiii.–192. Price 82 net.

THE title of this book as printed on the outside of the cover gives the idea of the work. There we find it called "Starvation Treatment of Certain Malignant Growths." The first suggestion that the growth of a tumour might be controlled by a diminution of its blood-supply appears to have been made by William Harvey who tied the spermatic artery for a tumour of the testis. From time to time since then the same principle has been applied with varying success. It is chiefly in the case of tumours involving the tissues supplied by the external carotid artery that this method of treatment has been employed but the anastomoses are so numerous and the collateral circulation is so readily established that the effect on the blood-supply of the growth is only momentary. About eight years ago Dr. Dawbarn conceived the idea of attempting to control the blood-supply of these tumours by the complete excision of the external carotid artery on both sides. From *a priori* considerations it might be thought that such an extensive removal of blood-vessels would interfere injuriously with the circulation of the skin of the face but in practice it appears that this danger is imaginary. In most cases the growth was excised also. The author has now performed this operation on many cases and several other surgeons have also employed it. In all there have been 48 cases treated by this method; of these 24 were cases of carcinoma, 20 were sarcoma, two were angiomata, and in two cases the report is indefinite. In one of the sarcomatous cases death followed two hours after the operation and of the remainder only 11 are available for study as to the ultimate results, as the others could not be traced. In two of these recurrence occurred and of the rest five have survived the operation more than three years without recurrence. Of the 24 cases of carcinoma 14 died within a year of the operation and as some of the other cases could not be traced there remain only two in which the result was positively known to be favourable. The ages of the patients have varied greatly; in one case a patient who was only six months old recovered.

A later modification of the operation suggested by Dr. Wyeth is the injection with paraffin of the occipital, temporal, and internal maxillary arteries after excision of the carotid in order to limit still further the blood-supply of the diseased area. The results, however, do not seem to be very favourable to this modification, as many of the cases died within a few hours of the operation. A full account of the technique of excision of the carotid is given and details are afforded of the cases in which the operation has been performed. It is perhaps too soon to express a decided opinion with regard to the value of the operation but it may well be deserving of trial in some cases of inoperable new growths of the external carotid region, especially sarcomata. The author is careful not to make excessive claims for the operation he has devised but to relate dispassionately the cases in which it has been performed. We may mention one small verbal blemish. On p. 6 we find "there was one death from secondary mortality"; as it stands the meaning is a little obscure; perhaps it should be "secondary hæmorrhage."

The Life of Frederic William Farrar. By REGINALD FARRAR. London: Nisbet and Co. 1904. Pp. 351. Price 6*s*.

Dr. Reginald Farrar deserves credit for having produced a biography of his father, which is at least of a reasonable length. As is natural in a work written by the son of a father who idolised his children, a certain amount of filial bias is apparent. But a biography, from the very nature of things, is not unlikely to be biased, since it is generally written by one who was on terms of intimacy with his subject, and extreme intimacy naturally means affection. Although then we cannot always see eye to eye with Dr. Farrar in his appreciation of his father's writings and style, yet we are free to confess that Farrar wielded an enormous power over his hearers. There is a class of mind which prefers the hymns of Faber to those of St. Ambrose, and Farrar's extravagantly ornamented style certainly found favour with many.

In an appreciation written by Dr. James, head master of Rugby, which Dr. Farrar quotes, a passage occurs stating that Farrar himself attributed his style to his fondness for certain authors of whom Jeremy Taylor was one. There is no doubt that Jeremy Taylor introduces quotations from innumerable authors in his writings but to compare his style with that of Farrar is to compare the architecture of the

Mosque at Cordova with that of the Alhambra. Be this as it may, Farrar's life was that of a man filled with energy and indignation against what he believed to be wrong. He had the defects of his qualities: he apparently could only regard extremes, but the real saintliness of the man never shone out better than during the last weary years of his life when he suffered from a slowly progressive paralysis. This trial he bore with exemplary patience and it certainly refined away the defects of his nature. Everyone, and more especially, we should say, those to whom Farrar's writings do not appeal, will read the biography with interest and Dr Farrar may be congratulated on a sympathetic and in general a fairly judicial estimate of his father's career.

LIBRARY TABLE

Aids to Surgery. By JOSEPH CUNNING, M.B., B.S. Melb., F.R.C.S. Eng., Senior Resident Medical Officer, Royal Free Hospital. London: Baillière, Tindall, and Cox. 1904. Pp. 394. Price, paper 4*s*., cloth 4*s*. 6*d*.—There is a definite use for a book of this kind. It should not replace the ordinary text-book of surgery nor should it take the place of the regular work in the wards and in the out-patient room. It will not avail the careless or lazy student who has neglected his work till the eleventh hour, for surgery cannot be "crammed" at the last moment before an examination. But a book like this has a distinct value in presenting to the diligent student a *résumé* of the whole subject so that he may be enabled to glance rapidly through it for the purpose of revising and renewing what he has already learned. Employed in this manner nothing but good can result from the use of this little book. Of its class we do not know one more carefully written and so far as we have tested it we have not succeeded in finding any error.

High-frequency Currents in the Treatment of Some Diseases. By CHISHOLM WILLIAMS, F.R.C.S. Edin., M.R.C.S. Eng., Electro-therapeutist, West London Hospital, &c. London: Rebman, Limited. 1903. Pp. 222. Price 10*s*. 6*d*. net.—There was distinctly room for a work on the therapeutic application of high-frequency currents and the book before us does to some extent supply that need. Many claims have been made for the great value of these currents in treatment and, as was only natural, a large proportion of the claims cannot be substantiated but experience is showing that even when very many of the reports have been fully discounted there yet remains no small number of cases in which material improvement has followed the employment of currents of high frequency. Mr. Chisholm Williams's book contains a description of the apparatus employed in producing these currents and this is, on the whole, good, though hardly sufficient for a reader quite new to the subject. Then follow chapters on the Physical and Physiological Properties of High-frequency Currents and lastly the therapeutic methods are described. The diseases are then mentioned for which this form of electricity has been employed and the author describes somewhat in detail a few of the cases. A few mistakes occur. On p. 41 it is said that the cells of the Nodon valve "slowly heat up to 50 centimetres"; we suppose "50° centigrade" was intended. On p. 43 it is said that static machines "produce electricity by friction." Of course, this is not true of the ordinary modern static machines, such as Wimshurst's.

Surgical Notes from Four Continents and the West Indies. By NICHOLAS SENN, M.D. Pp. 198.—This book is a reprint of various papers contributed by Dr. Senn to *American Medicine* for 1902-03, during which time the author was travelling in various parts of the world. Dr. Senn is a good observer and his remarks are worthy of note. The various papers deal with, amongst other subjects, Medical Paris, Medical London in Summer, Surgical Observations in Berlin, Renal Surgery as Practised by Professor James Israel, and Glimpses of the Practice of Medicine and Diseases in the West Indies. Altogether the collection is very interesting.

The Still Room. By Mrs. CHARLES ROUNDELL and HARRY ROBERTS. London: John Lane. 1903. Pp. 156. Price 3*s*. net.—This is a book the perusal of which causes the Londoner to sigh. For it calls up visions of orchards and beehives, of cool dairies, and sunny gardens full of the warm smells of thyme, rosemary, and lavender. A more delightful mixture of the carnal and the spiritual we have seldom seen, for there are elaborate directions as to the preparation of tasty meats, such as hams and spiced beef, together with a chapter on distilling, which work, say the authors, "is worthy of fine natures and should be undertaken with a mind full of reverence." We confess to being horrified at one recipe which is that for a ham to be cured in the Norfolk fashion. After the ham is pickled the recipe proceeds: "Then brush it over with Crosse and Blackwell's essence of smoke. This preparation gives to the ham all the flavour of the chimney smoke in which hams used to be hung." Essence of smoke is a concession to modern hurried methods of curing meat which we should not have expected to find in a book edited and partially written by Mr. Harry Roberts but we see that Mrs. Roundell is responsible for the chapter in which the statement appears. The slow impregnation of a ham with pyroligneous acid and other products of the slow combustion of wood produces very different effects to brushing it over with a solution of the smoke. This is the only fault that we have to find in an excellent book but we must warn the would-be distiller of "waters" and essences that if he does not get a licence from the revenue authorities for his still he may find himself one day in trouble.

JOURNALS.

Edinburgh Medical Journal.—The original communications in the March number are on Hernia, by Mr. J. Rutherford Morison; on the Treatment of Cleft Palate, by Mr. W. Arbuthnot Lane; and on the Neural Factor in Heart Disease, by Dr. Alexander Morison. Instalments are also published of the articles on the Causes, Pathology, and Treatment of Chronic Rheumatism, by Professor Ralph Stockman and on the Relations of the Insanities to Criminal Responsibility and Civil Capacity, by Sir John Batty Tuke and Mr. C. R. A. Howden, advocate. Of the editorial paragraphs, some deal with the proposed age limit for the staff at the Edinburgh Royal Infirmary and with the acknowledged objections to the administration of chloroform for the extraction of teeth.

Mercy and Truth.—The principal articles in the March number are by the Rev. M. Mackenzie, M.B. Edin., on the Fuh-Ning Hospital in Southern China, and by Miss Winifred Westlake, L.R.C.P., L.R.C.S. Edin., on the staff of the Women's Hospital at Julfa, in Persia.

Technics.—In the opening article of the March number Lord Rayleigh publishes a lecture on Shadows recently delivered by him at the Royal Institution of Great Britain. The reference is chiefly to acoustic shadows—i.e., those thrown by sound—and a number of interesting experiments are described. Among the numerous other subjects treated of mention may be made of the instalments of the papers on the Diagrammatic Illustrations of Class Lectures, on the Heating and Ventilation of an Educational Building, and on the Bacteriology of Brewing. A variety of practical electrical topics are also introduced.

New Inventions.

AN IMPROVED COUCH FOR THE CONSULTING ROOM.

THIS couch has been designed for use in small consulting-rooms where space is a consideration. It has the advantage of occupying the minimum of room when not in use, since when folded it only occupies a space of about seven inches projecting from the wall and extending, of course, longitudinally for the length of the couch. The body, which resembles the ordinary couch in use (with tilting head-rest), is attached by hinges to a framework which in turn is secured by screws to the skirting board. If the skirting board is a deep one, say, about ten inches, no other fixing is necessary, but if it is smaller the framework can be further secured by two screws to the wall. The front legs can be folded out of sight underneath the

FIG. 1.

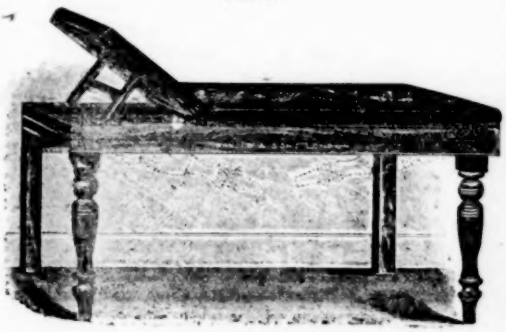

FIG. 2.

body, as shown by dotted lines in Fig. 1, and the couch then falls downwards by its hinge attachment against the wall as shown in Fig. 2. When wanted it is easily lifted up and the front legs after being pulled down into their place are kept in position by the weight of the couch itself. The couch is absolutely steady and in actual use has proved itself extremely convenient. Within certain limits the dimensions may vary, but probably the most convenient size is about 5 feet 6 inches in length by 1 foot 10 inches in width and 23 or 24 inches in height. It is made by Messrs. Arnold and Sons of West Smithfield, London, E.C.

ARCHIBALD CAMPBELL, M.B., C.M. Glasg.
Newcastle-on-Tyne.

A RETRACTOR FOR INTRACRANIAL OPERATIONS.

THE instrument shown in the accompanying illustration is designed for use in the Krause-Hartley operation for removal of the Gasserian ganglion in which the temporal lobe with its dural covering is elevated and retracted from the basis cranii. Its present form has been attained after use in practice and it possesses the following advantages over the ordinary flat malleable copper retractor: (1) it is so shaped that it is comfortably held by an assistant's hand resting on the patient's head and does not obscure the field of operation; (2) it is deeply, but not sharply, serrated and with an undercut bulbous extremity to prevent its sliding off the smooth and wet surface of the dura mater; and (3) it

is highly polished to act as a reflector to a head lamp worn by the operator. It was originally made for me by Mr. Farrow (Coxeter and Son) from my design but can now be obtained from Messrs. H. and W. Davis, 52, Grafton-street, London, W.C.

DONALD ARMOUR, M.B. Toronto, F.R.C.S. Eng.
Harley-street, W.

Looking Back.

FROM

THE LANCET, *SATURDAY*, March 25, 1826.

A few remarks[1] in conclusion on the culture of chirurgical knowledge, and on the conduct of its professors will not be irrelevant.

Liberality of sentiment encourages merit and fosters genius; a jealousy of excellence creates envy, which ever detracts from the qualifications of others and stifles rising talent. It is a pleasing reflection to survey the improvements which have of late been manifested in the various branches of science, and to contemplate the general benefits which the patronage of the liberal-minded has conferred upon mankind.

But in the review our satisfaction is not unmingled with regret, when we discover that equal advantages have not been extended to all; that one science, the most important as regards the actual comforts of men, has been excluded from this otherwise general support. It has been alleged against the most exalted members of the chirurgical profession, that they have limited the opportunities of improvement, and founded measures calculated rather to impede the progress of scientific knowledge, than to cherish it. That this is not an idle averment, facts do but too plainly testify; the pertinacious adherence to absurd forms and the adoption of rigorous orders evince its truth.

Of what utility is it to mankind if the curiosities which have been afforded to philosophic research are defended from the eye of the inquirer? If the peculiarities incident to human nature are hidden in the venerable dust of obscurity? It is like digging for gems, and then burying them in a dunghill. Who is he that hides his talent in the earth to preserve it? The man who cannot estimate its value, and who therefore is not worthy the possession of it.

Those men are guilty of an injustice towards their fellow-creatures, who have the power to extend real benefits, and who do not exercise it with discretion. It is not allotted to all, to be equally wise; one man by superior attainments, or from fortuitous causes, may have acquired the means of improving our knowledge in a particular study; is it then the duty of his successors to appropriate these advantages to themselves? Are they not bound by the gratitude which is due to his memory, to perpetuate his fame and virtues by imitating his laudable example? To say that he was accounted wise, does not honour them, but rather tells a tale which they would blush to hear.

Misrule never exulted in a long reign, and I hope a brighter sun will dispel the clouds which have so long obscured the horizon of this science. Liberality will usher in genius in triumph, and humble merit will assert its prerogative, freed from the fetters imposed by envy and riveted by ignorance.

[1] Excerpt from "Anatomy and Surgery considered in Relation to the Other Branches of Learning" by Mr. William Steele.

THE LANCET.

LONDON: SATURDAY, MARCH 26, 1904.

The Gift to University College, London, and Medical Education.

THE munificent gift of Sir DONALD CURRIE to University College, London, came as a surprise to the medical world at the end of last week. It has long been known that among the obstacles which hindered the projected incorporation of University College with the reconstituted University of London was the Medical School of University College. University College was eligible for complete union with the University save for its connexion with the hospital and medical school. After careful consideration of the position Sir DONALD CURRIE has swept aside all barriers to progress by the offer of a sum sufficient to provide for the erection of buildings for the Medical School of University College. These buildings are required for the advanced medical studies and are in no way intended to provide accommodation for anatomy, physiology, pharmacology, biology, chemistry, and physics, which, as subjects of preliminary and intermediate medical study, will continue to be taught within the walls of the College. This at least is the intention of the donor of the new buildings and the sum which he provides—£80,000—should be sufficient for this purpose. The money will complete the School of Advanced Medical Studies which has to be built before incorporation of the College with the University can take place, as one of the conditions of incorporation is the separation of the Medical School from the rest of University College. The remainder of University College will now, presumably, enter the incorporation scheme, becoming part of the University of London and being directly governed by that body.

The distinction that is thus drawn between advanced medical studies and the preliminary and intermediate subjects is one for which all interested in education have been gradually preparing. It has long been recognised that the career of medical students should be definitely divided into two sections. The one should comprise instruction involving practical work mainly connected with anatomical and physiological conditions, and thus requiring laboratory demonstrations and entailing the considerable expense of a teaching staff composed of experts. The other and greater branch should be that in which the knowledge hitherto gained is applied to pathological conditions, and for this teaching to be effectual it must consist largely of demonstrations upon patients in a hospital. Laboratory work is still requisite in this clinical course, or "course of advanced medical studies," but it is connected with bacteriology and experimental pathology, which can best be taught by those in daily contact with clinical work. The division of early from advanced medical studies has really formed the main difficulty connected with the teaching of medical students in the metropolis. In the absence of endowments the teachers of the earlier subjects have either been working at their own expense in the hope of future advancement or they have been supported by the self-denial of their colleagues engaged in the active professional work of medicine, surgery, obstetrics, or some other special branch, and therefore presumably more able to dispense with the need of receiving any remuneration for their labours. The conditions have long been felt to be pre-eminently unsatisfactory, since every medical school has been forced to face the incubus of supporting expensive departments for the early subjects. Numerous measures have been suggested for saving this lamentable waste but, inasmuch as every scheme entailed coalition of the medical schools of London for the teaching of preliminary subjects, it also implied that some teachers would probably be forced to relinquish their position and to look for other openings. When an appeal appeared for funds to build new dissecting rooms and laboratories at South Kensington in connexion with the University of London the idea of centralisation came for the first time prominently before the public. This appeal proposed to provide adequate remuneration for the different professors who were to be called into existence, or rather to be attracted from the present medical schools, and it was thought that many of the schools would have gladly welcomed the opportunity of effecting a legitimate economy and of retiring from a hopeless competition. When this idea was first discussed it was recognised that it was improbable that University College and King's College would consent to the proposal, or would agree to transfer to South Kensington students for whom adequate provision already had been made at great sacrifice. Sir DONALD CURRIE'S gift renders it highly probable that in future schemes of centralisation a strong effort will be made to utilise existing facilities for instruction in anatomy, physiology, and the other preliminary and intermediate subjects. It is true that the advantages of the University of London are frequently mentioned in Sir DONALD CURRIE'S letter which accompanies his splendid gift, but it will be seen that he definitely arranges for the provision of a school of advanced medical studies instead of supplying the University of London with the means of competing with all the existing medical schools. It is possible that Sir DONALD CURRIE'S gift will indirectly postpone the completion of the scheme of building new laboratories at South Kensington and that the outcome will be an impetus to centralisation round University College and King's College. The main hindrance to centralisation of studies for the preliminary and intermediate subjects has been the dread lest students, who are thus sent from the hospitals in which they have entered for their whole curriculum, might be tempted to transfer their allegiance from their original schools. It will be curious to observe whether this uneasiness will not ultimately lead to an influx of students to King's College from other medical schools, when the proposed complete organic and geographical separation of King's College Hospital and its school of advanced medical studies has been carried into effect.

Although Sir DONALD CURRIE'S gift is primarily intended for the more effective development of medical and hospital work in London which would follow the reorganisation of the relationship between the University of London and University College, it is perfectly possible that the immediate result might work to the benefit of King's College. The latter institution still stands in need of one or more generous donors who will facilitate the building of the hospital on the new site in Camberwell and the site is sufficiently extensive to afford accommodation for some 600 patients without any overcrowding. The new building will, however, be so far removed from the College that its claim for consideration must be based upon its clinical material and upon the reputation of its teachers rather than upon its nominal connexion with a well-equipped medical school in the Strand.

The Bill under consideration, which will shortly be presented to Parliament with the object of bringing about the incorporation of University College with the University of London, should now meet with no opposition. The great impediment hitherto has been that funds to provide a medical school for the hospital separate from the rest of the institution were not forthcoming. Sir DONALD CURRIE'S gift not only benefits University College therefore, but greatly benefits the University of London by bringing the incorporation of University College within sight. In forecasting the future of medical education in London we must not lose sight of the second and third purposes for which Sir DONALD CURRIE has devoted a further sum of £20,000—viz., the construction of a suitable home in immediate proximity to University College Hospital for the accommodation of nurses and of medical students attending the poor women of the neighbourhood in their confinements. The thoughtful benevolence which has prompted this dual scheme is worthy of all admiration. It is needless to dwell on the importance to the nurses of a home near their work and yet sufficiently removed to insure quiet. The advantages of the provision made for the comfort of students attending maternity cases are very obvious and will certainly be regarded as a great boon. In every way Sir DONALD CURRIE has been most happily inspired in his splendid generosity.

The Recent Epidemic of Small-pox in Liverpool.

OUR Liverpool correspondent referred briefly last week to a most important report made by the medical officer of health of Liverpool on the recent severe epidemic of small-pox in that city, which is now happily at an end. The document is of real and general interest. The first case of small-pox was notified in September, 1902, and from that month to the end of the following January 99 cases were reported in Liverpool. The epidemic lasted from the autumn of 1902 to the end of 1903, a period of 16 months, during which time at least 2032 cases of small-pox are known to have occurred within the municipal boundaries, in addition to 28 cases that were reported from neighbouring districts. The attacks were most numerous (356) in the month of March, after which the numbers declined, at first steadily and afterwards more rapidly, until during November and December only a single case was reported. Dr. E. W. HOPE tells us that the extension of the outbreak commenced with an unrecognised case in Robsart-street, which was the first case known in the vicinity. The patient was an unvaccinated infant who was actually dead by the time that intimation was received by the medical officer of health. On visiting the house six other persons were found suffering from the disease and were promptly removed to hospital. As a result of a house-to-house visitation of the district 20 more cases were discovered by the sanitary staff, most of them friends of the infected family, and six others were notified by neighbouring medical men. The further progress of the disease, which in Dr. HOPE'S report may be followed by the help of a series of spot maps, shows that it disappeared from one part of the city to reappear in another. As indicating the rapidity with which the disease spread after its first introduction we learn that infection had reached the Walton district, which is in the north of Liverpool, by the end of December and that during the succeeding few months it was carried by infected persons to the east and south quarters of Liverpool. Meantime it must be remembered that re-importations from neighbouring towns and districts, either by travellers or by tramps, had been frequent, the re-introduction of centres of infection increasing the difficulties encountered by the sanitary officials. Dr. HOPE considers the mode of infection in the majority of cases to have been either direct contact with infected persons or things or else indirect contact, as in the case of a healthy person conveying contagion from an infected house to fellow employés at his place of business or to other persons in places that he frequented. As had previously been the case in the metropolis, so was it also in Liverpool—uncertainty as to the nature of the illness in certain cases was a fruitful cause of the spread of small-pox. Owing to the fact that a large number of cases of that disease modified by vaccination were regarded by medical practitioners as cases of chicken-pox Dr. HOPE found it expedient to schedule chicken-pox as a notifiable disease in order that doubtful cases might be visited by a medical officer specially familiar with the graver condition. The necessity for this precautionary measure is proved by the fact that 54 cases of small-pox which were actually under treatment for chicken-pox were discovered by the appointed experts and in almost all cases removed to hospital for isolation and treatment. Unfortunately, however, there occurred several attacks of small-pox of so mild a type that no medical man was called in, and consequently the real nature of the disease was in many instances not revealed until after several other persons had been infected, in some cases severely. In many instances the patient, ignorant of the serious nature of his illness, had sought advice from the local hospitals, mixing with the out-patients in the waiting rooms until his turn came for inspection by the medical man. Dr. HOPE further refers to the carelessness of infected persons who constantly used the public conveyances on their way to places of business, thus infecting not only their fellow passengers but also the clothes and other articles with which they came in contact.

In the course of this report the several measures are specified that have been so successfully employed in

grappling with the recent epidemic. Before noticing these in particular we may say at once that the fact that in a vast population like that of Liverpool, imperfectly protected as it is by vaccination, an epidemic of such severity as that under consideration should have been completely stamped out within a period of 16 months reflects the highest credit on everyone concerned in the sanitary administration of the city. The members of the corporation are doubtless proud of its health department. They are fortunate in the possession of an energetic and competent medical officer of health and, prudent men of business as they are, they evidently encourage him with that support without which effective preventive action on his part would be an impossibility. It appears that in Liverpool the existing provisions for the notification and isolation of cases of dangerous infectious disease are carried out with a thoroughness which, we fear, must be regarded as exceptional. Out of the 2032 known cases of small-pox all but two (who were either dead or moribund) were promptly removed to hospital and the usual methods of disinfection of places and clothing were carried out by an experienced staff. The employers of patients and of "contacts," schoolmasters, and others were forthwith communicated with and advised as to preventive measures for the limitation of infection. In order to encourage vaccination an extra medical staff was engaged to visit houses from which cases had been removed and to vaccinate all persons who had been in contact with small-pox patients; with the same object the staff also visited factories, workshops, common lodging-houses, and other places where large numbers were assembled; they even went the length of instituting a general visitation of houses in courts and other insanitary places in the town, the result being that large numbers of people willingly availed themselves of the protection of vaccination. As a further precaution we learn that after removal of a small-pox patient the infected house and all "contact cases" were visited daily for the ensuing fortnight and occasionally afterwards, and on the discovery of any suspicious case of illness a medical officer was at once in attendance. In this way Dr. HOPE tells us that "at one period as many as 2000 families were visited daily by the inspectors with the result that 470 cases were discovered that would otherwise have escaped detection." A still further precaution was the following. On the occurrence of small-pox in a "court house" or other insanitary premises the other inmates of the dwelling were removed to the city hospital for disinfection and revaccination. Where necessary these "contacts" were detained for 12 days before returning to their homes, their wages being paid by the health committee in the meantime. The occupants of certain lodging houses and of tramp-houses also received payment of a similar kind so long as they remained where they were at the request of the medical officer, provided that they were revaccinated and conformed to other necessary regulations. In five instances this detention resulted in the isolation of persons who were incubating the disease, and in the case of persons frequenting the common lodging houses of the lowest class this arrangement was followed by the complete cessation of fresh attacks.

The report is replete with tabular statistics showing the effect of vaccination in modifying the severity of cases of small-pox. These tables will well repay perusal. The lessons that they teach, however, do not greatly differ from those to which reference has frequently been directed in these columns, but the portion of Dr. HOPE'S report which treats of the influence of small-pox hospitals on the spread of the disease deals boldly with a very contentious subject. Until within recent years there was an impression that a small-pox hospital, however well conducted, must necessarily be a source of infection to the district in which it is situated owing to what is known as aerial convection. "It is important therefore," says Dr. HOPE, "that the experience of the Liverpool hospitals in this respect should be borne in mind, because it shows that in strictly disciplined institutions, placed as these hospitals are, no danger arises from this source." Dr. HOPE supports his view, which he is not alone in holding, by a certain amount of evidence, though he does not prove his point. It is well known that in the past small-pox hospitals have been "run up" hastily to meet pressing needs and without precautions against contact between patients inside and the public outside the hospitals. We have before us trustworthy evidence that not many years since a large provincial hospital was thus hastily constructed in the face of an epidemic of small-pox, the only provision against trespass consisting of a wooden paling ten feet high. Around this paling might be seen scores of friends on one side of the fence conversing with convalescents on the other side, with only a barrier of one-inch boarding between them! Having regard to what we know of the peculiarly infective character of small-pox it is small wonder that the disease should have spread in the circumstances mentioned, and it would be absurd to argue from this that the safe isolation of small-pox in a properly constructed and administered building is impossible. But then this never has been argued, while the strongest evidence of a certain measure of circumjacent mischief, even where all possible precautions would appear to have been taken, has been laid before the medical profession from time to time. Dr. HOPE now shows that in Liverpool three large hospitals have practically exterminated small-pox from the city without adding to the number of cases recorded. This is most creditable to those responsible for the institutions in question, as showing the good that may be effected by careful management, but it is far from a complete rejoinder to the theory of aerial convection.

The Infectivity of Scarlet Fever.

FOR many years past there has been a growing tendency to doubt whether the orthodox views with regard to the infectivity of the desquamated cuticle of patients recovering from scarlet fever were based upon anything worthy to be regarded as evidence but until quite recently it has been the almost invariable practice to retain scarlet fever patients either in hospital or in their own homes until the last trace of dead cuticle has vanished. This is still the general custom and charges of something akin to malpraxis are sometimes brought against hospital authorities if a child discharged from a fever hospital is found to be desquamating. This desquamating process is apt in some cases to drag on almost indefinitely

and, having apparently ceased, it is not unusual to find that the process has recommenced. It thus comes about that an enormous tax is made upon isolation accommodation and children otherwise well have to be detained for two and even three months before the medical officer cares to risk his reputation, and perchance an action at law, for what may be regarded as premature discharge. But occurrences have taken place within recent years which have called in question the view that scarlet fever is spread mainly by children during the desquamating phase of their illness. A sudden demand for the isolation of the far graver disease, small-pox, has at times necessitated as a *pis aller* the emptying of a hospital of all its scarlet fever patients and in this way the desquamating thesis has been put to a crucial test. But these experiments have failed to demonstrate that patients otherwise well but still desquamating from scarlet fever are a source of danger to the community. Indeed, the evidence upon which the cuticle theory is based is very difficult to discover and there are in these days many who hold that the chief sources of infection are the fauces and air-passages and the discharges from the ears and nose which, at least in some years, are such a frequent accompaniment of scarlet fever. It has been practically established that what are termed "return" cases of scarlet fever are in the main due either to existing or recurrent rhinorrhœa or otorrhœa or to the persistence of some infective material in the air passages of a patient recently arrived from a ward where infection existed in a somewhat concentrated form. Acting upon this knowledge certain medical officers of health, and among them Dr. J. NIVEN of Manchester, have succeeded by keeping patients about to be discharged in what may be called a diluted if not entirely uninfected atmosphere, and by the diligent application of nasal and aural and throat syringing, in reducing the "return" cases to very small proportions.

In THE LANCET of March 12th, p. 712, we published an instructive paper upon this very subject of the source of scarlatinal infection by Mr. R. E. LAUDER, the medical officer of health of Southampton, and it will be useful if we briefly recapitulate certain of the points brought out in that paper as they teach some useful lessons. On the arrival of a case of scarlet fever at the Southampton isolation hospital it is examined in the ambulance and a swab is taken from the throat for bacteriological examination. Doubtful cases are, as is customary in other well-managed and well-equipped hospitals, put into an observation ward, but cases of scarlet fever are placed at once into what is called an "acute ward" until the acute phase of the disease has passed and a bacteriological examination of the swab above referred to has excluded diphtheria. The acute phase having passed the cases are removed to the general ward, where the recent cases are kept apart from those that are convalescent, and if an aural or nasal discharge supervenes or other complications arise the patient is removed to a ward reserved for the purpose. At the end of the third week of the disease the patients, if free from any complications, are transferred to another pavilion, passing on the way through the bathing block through which they go on their final discharge; indeed, seeing that they are passing to a thoroughly disinfected pavilion this stage in the process may be looked upon as a rehearsal of the final discharge. In this pavilion the patients stay one week, the nose, ears, and throat being syringed with a disinfectant each evening after bathing. At the end of this—i.e., the fourth week of the disease—the patients undergo the usual bathing process and are sent to their homes whatever may be their condition as regards desquamation. After their discharge the pavilion in which the patients were housed is thoroughly disinfected and the general wards are also disinfected frequently. It is claimed by Mr. LAUDER that these methods have not only "comparatively freed" the patients from albuminuria, enlarged glands, rhinorrhœa, and otorrhœa, but have reduced the duration of the fever and the length of stay in bed, while during the year of the new *régime* there was no case of post scarlatinal diphtheria or of relapse. In 1902 the average stay in hospital was 48 days and in 1903 34 days; in the former year the "return" cases amounted to 4·27 per cent. and in the latter year to 2·15 per cent. During the year 204 persons were discharged peeling but without any complications and only two of these cases gave rise to "returns." In one of these cases a discharge from the nose developed after leaving hospital. These 204 cases returned to 180 houses which had an average accommodation of five or six rooms and contained 744 persons who had never suffered from scarlet fever. Of these, 363 were under 15 years of age. As regards the case mortality of the hospital and home-treated cases the Southampton figures are instructive. Of the 325 cases treated in hospital the fatality-rate was 1·5 per cent.; of the 74 cases treated at home the fatality-rate was 4·1 per cent.

Mr. LAUDER'S experiences during 1903 were certainly very suggestive and we shall watch a continuance of the experiment with considerable interest. It is a matter of common knowledge to all those conversant with isolation hospitals that the complications and sequelæ of scarlet fever, as also the number of "return" cases, vary enormously from year to year and therefore we shall do well to be cautious in our generalisations. But nevertheless we feel quite sure that Mr. LAUDER is on the right lines in insisting on differentiation of his cases and the provision of a large number of small wards. This is the line that we have adopted in THE LANCET in dealing with the isolation hospital problem, and although such a provision means probably greater initial and administrative expenditure, if the duration of stay in hospital be thereby curtailed a greater number of cases can be accommodated in a given time. It is, perhaps, well to bear in mind in connexion with the question of the infectivity of the detached cuticle that in the Southampton series the patients were frequently bathed, and it will be interesting to learn from next year's report how far these baths may conceivably have had a disinfectant action upon the cuticle. But similar "premature" discharges have, we believe, been made in other places in the absence of bathing and with practically identical results.

TORQUAY HOSPITAL.—About £900 have been already received in response to the appeal for £2000 for the new children's ward at the Torquay Hospital.

Annotations.

"Ne quid nimis."

THE LATE DUKE OF CAMBRIDGE.

THE death of the Duke of Cambridge has shown that the affection of the country for the simple old soldier who for two generations was the head of our army was deep and sincere. He lived to see the British army entirely transformed, to see traditions which he most cherished abolished, and to see himself superseded, and on all hands it has been allowed that his combination of good sense and good nature enabled him to accept the situation with dignity. He was an admirer of old customs, and had been bred in the faith of ancient traditions, but he was not an obstructionist. When he could not appreciate measures of reform he would still accept them as evidences of progress which he was compelled, if only by the circumstance of his years, to watch rather than to forward. We had personal relations with the late Commander-in-Chief, now some 36 years ago, and know that above all things the welfare of the soldier in the ranks was his care. The occasion was the rebuilding of Knightsbridge barracks, which in 1868 had fallen into a condition of desperate disrepair. The Barrack Commissioners had reported in most uncompromising terms upon the defects of the buildings, the residents in the neighbourhood had openly complained of them as a common nuisance, officers had deplored the want of decency that the lack of proper sanitary accommodation entailed upon the men, and Members of Parliament had asked questions. But nothing was done until THE LANCET, with the private sanction of the Duke of Cambridge, sent two Special Commissioners to make a report upon the buildings. A surprise visit was paid by night to the barracks. No opposition was made by the authorities and the whole lurid story was made public.[1] At once it was seen that re-erection of the buildings was necessary. The Duke of Cambridge urged that the old site should be used and pledged his word that economy should be observed; the necessary money was granted by Parliament; and the measures for a reform, the urgent necessity for which had been obvious to all thinking persons for years, were set in motion at once.

PHYSIOLOGY IN EDUCATION.

UNDER the above heading Mr. R. Brudenell Carter, F.R.C.S. Eng., delivered a lecture on March 15th at the Owens College, Manchester, by invitation of the Medical Faculty. In the opinion of the lecturer the increased control over national education which the recent Education Act had brought within the reach of the public furnished an opportunity to the members of the medical profession of which it was their duty to avail themselves. They were the only people, generally speaking, by whom physiology was studied and it was time for them to assert their position as guides to the uninstructed. In his opinion the art of education at the present day was in much the same position as the art of healing as described by Molière. Physiology should now apply herself to investigate what was necessary to be done in education. There were three problems of primary importance as regarded education before the physiologist. The first was to ascertain the greater or less strength of the force generator (the brain) as a whole; the second, assuming that every healthy child was adequately endowed at birth with brain cells in a rudimentary state, was to ascertain what were the conditions which called those cells into activity or which condemned them to remain only partially developed; and the third was to ascertain what circumstances determined development in one direction rather than in another. When physiology had solved these problems she would be able to teach mankind to what extent the growth and activity of the brain might be modified by external agencies. As to the nature of these agencies it was not inconceivable that certain forms of nutriment and the power to assimilate such forms might hold a place among them. From this point it was but a step forward to inquire how far physical and mental degeneration were due to the improper selection and improper preparation of food, to preserved provisions, to chemically made beer, to imitations of jam and sweetmeats, to the advertised substitutes for household cookery, and to the excessive consumption of tobacco. One very important question which as yet had not been answered was, Could an underfed child be taught without sustaining injury from the process? If it could not the State had no right to insist upon such a child being taught. Mr. Carter went on to urge the importance in elementary schools for the working classes of early and systematic development of the senses. Speaking generally, the aim of the school should be to give to each individual the stimulus or guidance best calculated to develop his powers or to protect him against his weaknesses. It might be objected that schools were large and that schoolmasters must deal with the mass rather than with the individual. To this he answered that dealing with boys in the mass was unskilled labour and that every schoolmaster who had made a name for himself had done so by reason of his power of dealing with individuals. So ended a very interesting lecture and no on can doubt that Mr. Carter spoke words of wisdom. We have insisted again and again that education to be of any use at all must be a process of development and to develop an ill nourished brain from the psychical side is impossible. True, there have been geniuses like Chatterton and Schubert who did their best work when they were in bitter poverty but that is a different matter to the case of a starving child. Mr. Carter's remarks about foods are worthy of all praise. Jam is always popular and it should be nutritious. But the great majority of bought jams—in fact, we think that we may say all those consumed by the poor—are made with commercial glucose—i.e., invert sugar—a substance which has not a tithe of the nutritive power of even beet sugar, to say nothing of cane sugar. As to sweets it is well known that there is a large trade in condemned condensed milk for the purposes of confectionery. Mr. Carter's thesis supplies one more argument for the necessity for a revision of the Sale of Food and Drugs Acts. All jams should be labeled with a definite statement as to whether they are or are not made with cane sugar. As to the question of individual attention, we fear that in these days of enormous classes it is almost impossible. But if school boards would cut down the number of subjects which they try to teach by at least one half the classes could be made smaller. It is for the medical profession to lay Mr. Carter's words to heart and to insist upon education being conducted upon sound physiological principles. The ideal schoolmaster should form himself on the model of Thring, of whom it was said, "So he fed them with a faithful and true heart and ruled them prudently with all his power."

THE VICTORIA HOSPITAL FOR CHILDREN.

WE understand that a bazaar in aid of the Victoria Hospital for Children, Tite street, Chelsea, will be held at the Royal Albert Hall on June 21st to 23rd, under the immediate patronage of Her Majesty the Queen who has consented to be present on the opening day. New wards have been built at the hospital and it is expected that they will be open for the reception of patients before long. The

[1] See THE LANCET Special Commission on the State of the Barracks of the Household Cavalry at Knightsbridge, THE LANCET, June 20th, 1868.

object of the festival is (1) to raise £13,000 for the completion and furnishing of the new wards, and (2) to provide £3000 in new annual subscriptions for the maintenance of this extension. Gifts of suitable articles for sale at the bazaar will be welcome. The committee of the hospital in appealing to the benevolence of the public points out that since the removal of the Belgrave Hospital to South London the Victoria Hospital is the only hospital for children in the districts of Chelsea, Fulham, Battersea, Pimlico, Westminster, and Wandsworth, which contain an infant population of over a quarter of a million. Donations to the hospital will be received by Lloyd's Bank, 16, St. James's-square, London, S.W.

A FALSE ACCUSATION.

WE publish in another column a letter calling attention to a disgraceful case of false accusation against a medical man. There is no need to mention the details of the story. It is sufficient to say that for some weeks a member of our profession has remained under a terrible and disgusting accusation on the unsubstantiated word of a child. In the first instance, before the magistrate, Dr. J. T. C. Conry, who was alleged by a little girl in his domestic employ to have assaulted her, declared the story a complete fabrication invented for purpose of blackmail, and now the grand jury has unanimously ignored the bill. A group of medical friends are appealing in our columns to Dr. Conry's professional colleagues to subscribe in order to defray the inevitable expenses to which he has been put. No one knows better than we do that in the period of depression which this country is now undergoing the medical profession are as great sufferers in their purses as any class in the community, but the occasion is one when we hope that those who can afford to do so will be moved to send a subscription. The pecuniary loss to the medical man who has to sustain such charges is difficult to gauge, as it is impossible to say what effect the inevitable scandal may have on his practice, yet this loss is as nothing compared with the worry and the anxiety to which the accused is submitted. The support of his brethren in the medical profession is of double service to the unfortunate sufferer when his innocence is publicly established. It lightens his monetary burden while it also demonstrates to him that he has the respect and sympathy of his profession.

A NEW SYMPTOM IN TETANY.

TETANY is a condition arising from such diverse causes and one of which the exact mode of origin is even now so doubtful in spite of the very extensive and highly controversial literature which has grown up around its nature and pathogenesis that it still affords a good subject for clinical and pathological observation. Dr. A. J. Ssolowjew in the *Russky Wratch*, No. 20, 1902, records a symptom which he observed in the acute stage of two consecutive cases of tetany and to which he has given the name of the "phrenic phenomenon." It consisted of a contraction of the left side of the diaphragm occurring synchronously with the beat of the heart and producing some recession of the lower intercostal spaces on that side with a drawing up of the lower ribs. No abnormality was observed about the heart's action; the impulse was of normal intensity and was best felt in the normal situation. In a certain position of the patient, or better on auscultation of the cardiac region, a blowing sound could be heard which appeared to originate in the air passages. When the patient brought the abdominal muscles into play both the recession and the blowing sound ceased. The phenomenon was barely observable on the right side. That the appearances obtained were to be attributed to the contraction of the left side of the diaphragm was confirmed by Roentgen ray examination in one of the cases, when it was directly observed and found to be synchronous with the radial pulse. Dr. Ssolowjew's explanation of the phenomenon is that it is due to the direct mechanical excitation of the phrenic nerve or its branches by the beat of the heart and it is thus another example of the heightened mechanical excitability of the nerves in tetany which was first described by Chvostek and of which the most familiar example is the facial contraction produced by tapping over the facial nerve. That the diaphragm does in rare cases participate in the spasms of tetany has been previously recognised but Dr. Ssolowjew's symptom seems not to have been observed hitherto.

CHICKEN-POX AS A NOTIFIABLE DISEASE

CHICKEN-POX is one of those infectious diseases which, although not scheduled in the Infectious Diseases Notification Act, may be, and often is, made a notifiable disease by order of a local authority. In times of small-pox epidemic chicken-pox is occasionally notified in error as being small-pox, but, on the other hand, cases of modified small-pox or mild cases of primary small-pox in unvaccinated children are often mistaken for chicken-pox and the former disease is thereby spread. Therefore it is that during small-pox epidemics many local bodies, acting on the advice of their medical officers of health, have decided to make chicken-pox a notifiable disease. Such a course was taken in London during the recent small-pox epidemic with good results and in Liverpool, where the same course was taken, Dr. E. W. Hope found that 54 cases of small-pox were under treatment as cases of chicken-pox. The instances of Liverpool and London would seem to show that there is little doubt that the notification of chicken-pox is a valuable prophylactic against the spread of small-pox but some medical officers of health take a different view. Thus Mr. F. H. May, the medical officer of health of the borough of Aston Manor, in his report of the health of that borough during 1903 states that though the question of the compulsory notification of chicken-pox was referred to him by his health committee he did not recommend such notification. His reasons are shortly as follows. Only a small percentage of cases of chicken-pox are medically attended and therefore would not be notified, for although the parent or guardian is bound to notify as well as the medical man the general public, as a rule, will not notify. Moreover, mild, modified cases of small-pox are less likely to be attended by a medical man than severe cases of small-pox. Most districts obtain from school attendance officers notifications of cases of chicken-pox medically unattended, while cases medically attended are voluntarily notified by the medical man in charge. If complete notification were secured such notification would be of little use unless the cases were verified by the medical officer of health or by specially appointed experts. Such action on the part of the medical officer of health might lead to friction. Acting on such reasoning Mr. May addressed inquiries on the point to the medical officers of health of the 76 large towns of England and Wales, of the 29 county boroughs of London, and of Edinburgh, Glasgow, Dublin, and Belfast, 109 in all, and received 104 replies. Chicken-pox was notifiable in 54 of these 104 towns and in 50 of these 54 cases were visited for verification by the medical officer of health or by a specially appointed expert. Of the medical officers of health of these 54 towns 37 consider that it is an advantage to notify chicken-pox, 15 consider it of no advantage, and two did not reply as to this point. Our own opinion is that in large centres of population, at any rate, the notification of chicken-pox has a decided advantage and the Liverpool figures are surely conclusive. There is but little risk, we fancy, that any friction

would arise from the verification of doubtful cases and, in fact, Mr. May says that many of his correspondents stated that they found that medical men were quite willing to consult with the medical officer of health as to doubtful cases. We are quite alive to the fact that many cases of chicken-pox are never seen by a medical man but it is surely better that such cases as are seen should be notified, so that if there be any doubt about the diagnosis steps may be taken to see whether any particular case may be small-pox or not.

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As Sir Thomas Barlow said, whether they liked it or not, all thoughtful persons had to face the fact that in spite of admonition and advice the inrush of countrymen into the towns, and especially into London, would continue. The people whom they had to consider were those who were born and bred in London and it was the second, third, and fourth generations that had to be thought about because the question carried with it the all-important problem of the future efficiency of the population. There was no doubt with respect to London born people that there was deterioration in many different ways and due to many causes. The recruits sent from London to the South African war were from a physical point of view most inefficient creatures and all the more praise was due to them for the pluck and indomitable spirit which they showed on all occasions. For the improvement of the London-born and -bred population the factors of personal hygiene had to be put into practice and especially in regard to stimulants and proper food. Opportunities should be provided for the physical exercise of growing youths. They were thankful that the principles of municipal hygiene were not neglected but there was one factor that was apt to be forgotten and that was the absence of sunshine. In London adults became accustomed to the want of sunshine and seemed to get along with a fair average of health, but when Americans or Australians came to the metropolis the depression caused by the want of sunlight was most noticeable. The important hindrance to sunshine was the amount of mineral particles in the atmosphere. When people talked about fogs their thoughts turned immediately to November fogs and everyone knew the disastrous effects on old and weakly people, especially those afflicted with bronchitis, but there was a further point in the problem and that was that in London they always had fog. If they read the reports of the experts on the question the presence of fog over London due to the amount of mineral particles in the atmosphere would be appreciated as a factor that had to be recognised. The result of that canopy of fog shutting out the sunlight from London was a lower stratum of health and an impairment of vigour. Unfortunately, that effect was most manifest in young and growing people who most needed the light. Who could estimate the enormous loss sustained by the children in the metropolis, not only amongst the poor but amongst the well-to do, due to the presence of fog in the atmosphere cutting off such a large percentage of the life-giving sunlight. In the case of children it was not in the summer time that they flagged in health but it was towards the end of a long winter in February and March. It was at that period that the children of the city became pale, anæmic, and feeble. They were only on the threshold of understanding the effect of sunlight, for recent investigations had shown that the value of direct sunlight was absolutely untold. Architects and builders could help in the matter by providing more windows for light and air. Nurses and all those attending on sick peop'e could also do much by avoiding the almost universal plan of shutting out light and air from sick rooms. The way in which that was done was characterised by Sir Thomas Barlow as "quite superstitious." Passing from the question of the darkened sick room Sir Thomas Barlow discussed the present-day fashion of erecting enormously high buildings which practically converted many of the streets in the West-end of London into wells. 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CARDIAC AND ARTERIO-SCLEROTIC SEQUELÆ OF TYPHOID FEVER.

MANY observers who have especially studied the question of the sequelæ of infectious fevers state that, after acute rheumatism, typhoid fever is the one most frequently followed by cardiac degeneration and arterio-sclerosis. In recent years much attention has been given to the collection of exact data bearing on this point in view of the prognostic importance of such sequelæ. In the *American Journal of the Medical Sciences* for March Professor W. S. Thayer of the Johns Hopkins University gives an account of an investigation carried out at Professor W. Osler's clinic at the Johns Hopkins Hospital to ascertain the nature of the cardiac and vascular after-effects in a number of cases of typhoid fever treated in the last 14 years. Endocarditis was found to be a rare complication of typhoid fever, occurring in only 3 per cent. of cases which terminated fatally. Cases of sudden death in typhoid fever commonly attributed to cardiac failure were, as a rule, adds Professor Thayer, due to vaso-motor paralysis. The late Professor Thoma recognised typhoid fever as a factor in the production of that weakness of the muscular coat of the blood-vessels which he believed to precede arterio-sclerosis and the experiments of Gilbert and Lion have shown that changes of the nature of arterio-sclerosis may be produced in rabbits by the intravascular injection of pathogenic microbes such as those of typhoid and other fevers. The material investigated by Professor Thayer comprised 1400 cases of recoveries from typhoid fever during 14 years. An attempt was made recently to ascertain the further history of these patients and 183 were traced out and studied. A number of systematic observations were made on the condition of the heart, the pulse, and the blood pressure and the following results were obtained. The pulse-rate was normal (from 60 to 90 beats per minute) in 110 patients, in 65 it was accelerated (from 90 to 120 beats), and in the rest no records were made. Irregularity of the pulse was noted in 31 per cent. of all cases, this being especially marked when the pulse-rate was accelerated. In every one of 165 cases the radial tension, measured with the Riva Rocci manometer, showed a blood pressure higher than the normal at all ages. The difference was slight (eight millimetres) in young subjects up to the age of 20 years, but was marked (from 30 to 35 millimetres) in all above the age of 20 years. The radial arteries were fibroid and obviously palpable in 25 per cent. of patients between the ages of ten and 20 years and in 50 per cent. of those whose ages varied from 20 to 50 years. All patients between the ages of 50 and 60 years showed fibroid arteries which were easily palpable. Fibroid arteries were three times as frequent in the patients as in normal persons. Cardiac enlargement was observed in more than half of all the cases but actual valvular disease was

met with in only ten cases. While admitting that the results obtained from a study of these 183 cases are not sufficiently large to enable final conclusions to be drawn, Professor Thayer points out that "the fact that these 183 old typhoids are materially older from a point of view of their heart and arteries than the average individual who has not had typhoid fever would tend to support the view of those who regard this disease as an active element in the etiology of a considerable number of cases of cardiac hypertrophy and dilatation." Such changes coming on in early adult life are of grave prognosis, especially if an associated state of arterio-sclerosis is developed, since both physical and mental energy and capacity for work tend to be impaired prematurely.

THE CONGRESS OF OPHTHALMOLOGY AT LUCERNE.

A FEW modifications have been made in the original programme of the Tenth International Congress of Ophthalmology to be held at Lucerne next September and the attention of intending visitors is particularly directed to a slight alteration of the date of meeting. It is now arranged that the official reception of members will take place on the evening of Sept. 13th; the mornings and afternoons of the 14th, 15th, and 16th will be devoted to scientific work and on the 17th an excursion will bring the Congress to a close. Papers to be discussed have to be printed and sent beforehand to all the members of the Congress. It is therefore requested that the manuscripts of such papers may be sent by May 1st at the latest to Professor Mellinger, Basle, Switzerland. The first part of the proceedings of the Congress containing these works will be sent to the members at the same time as their tickets after receipt of the subscription (25 francs). Objects of ophthalmological interest, whether practical or historical, such as instruments, books, or illustrations, intended for the exhibition in connexion with the Congress should be notified before July 1st to Professor Siegrist, Berne. Visitors wishing to secure hotel accommodation at Lucerne beforehand are invited to apply before Sept. 1st to Dr. F. Stocker, president of the local committee, at Lucerne. Further information can be obtained from the correspondents for the United Kingdom—Mr. W. H. H. Jessop, 73, Harley-street, London, W.; Dr. George Mackay, 20, Drumsheugh-gardens, Edinburgh; and Mr. H. R. Swanzy, 23, Merrion-square, Dublin.

LYMPHADENITIS IN VARICELLA.

IN the *Gazette Hebdomadaire des Sciences Médicales de Bordeaux* of March 6th Dr. Lamacq-Dormoy has pointed out a symptom of varicella which does not appear to have received any attention—viz., enlargement of lymphatic glands. It occurs at the same time as the eruption and the more abundant the eruption the greater the number and size of the enlarged glands. They are found both in the axillæ and in the groins. The facial eruption causes enlargement of the pre-auricular and parotid lymphatic glands. The glands are sometimes considerably enlarged; in the axilla they may attain the size of a walnut. They are soft and distinct from one another but sometimes they are united into a group by the surrounding congested cellular tissue. They are always tender and sometimes are painful. They subside at the same time as the eruption but if a secondary inflammation is produced by scratching the enlargement may persist and the glands become more painful and hard. The mastoid and pre-auricular glands are constantly enlarged, sometimes before the appearance of the eruption, but then the enlargement is at its minimum and the glands are not larger than lentils. Dr. Lamacq-Dormoy has for several years habitually examined the pre-auricular and mastoid glands and finds that the former are always enlarged in coryza, particularly in inflammation of the posterior part of the nose, while the latter are enlarged when the naso-pharynx is affected. The association is so constant that when there is painful pre-auricular adenitis he infers that there is "posterior coryza." The following case is given to show the value of this lymphadenitis in the diagnosis of varicella. A youth, aged 17 years, was feverish but the only other symptoms were lassitude and headache. Pre-auricular and mastoid adenitis was well marked, the glands were small and painful, the pharynx and pillars of the fauces were cherry-red, and deglutition was painful. No trace of an eruption could be found on the body. As an epidemic of influenza prevailed at the time that disease was diagnosed. The patient complained of slight coryza and the conjunctiva on the lower eyelids was a little red, but on the following day the eruption of varicella appeared and there were several spots on the pillars of the fauces. In three other cases out of 15 Dr. Lamacq-Dormoy observed enlargement of the pre-auricular and mastoid glands two or three days before the appearance of the eruption. He found this lymphadenitis constant in 15 cases of varicella. The position of the first glands enlarged showed that the eruption began thrice in the naso-pharynx.

THE POPULATION QUESTION IN FRANCE.

UNDER the auspices of the *Revue Scientifique* M. Paul Strauss, a member of the French Senate, recently delivered an address dealing with the conditions upon which depends the high infantile death-rate which is one of the factors accounting for France's diminishing population. He stated that one-sixth of the total mortality occurs in children between the ages of one day and one year and that every year, apart from the secret practice of abortion the influence of which on the birth-rate is difficult to estimate, 100,000 embryonic existences were cut short or resulted in the production of infants who died immediately after birth. At the instigation of Professor Pierre Budin, Dr. Balestre and Dr. Gilletta de Saint Joseph have investigated the causation of death in the cases of 1000 infants dying in their first year. The figures are as follows: from diarrhœa or gastro enteritis, 385; from congenital debility, 170; from disease of the respiratory organs, 147; from tubercle, 24; from contagious disease, 49; and from other causes, known or unknown, 225. The diseases enumerated are to a large extent preventable, so that there is here clear indication of the improvement which might be effected by greater attention to hygienic considerations. Speaking of the dangers to the life of the child which are incidental to the time of birth M. Strauss referred more particularly to cases of two kinds—namely, those of girl-mothers and those of married women of the labouring classes. For the former he advocated the establishment of asylums where confinements might take place secretly and where, if the mother so desired, the child might be left behind. Whatever its intrinsic merits the suggestion is not one likely to meet with much sympathy in this country where it would probably be regarded as a direct encouragement to immorality but perhaps the French people know their own business best. As regards labouring women, stress was laid upon the necessity of securing ample rest on the part of the mother both before and after parturition. Some figures compiled by Professor Pinard and his pupils are of interest in this connexion. A number of infants born in maternity homes of mothers who had been for some time resting were compared as to their weight at birth with those of women who had pursued their ordinary avocations up to the last moment and were found to be on an average 200 grammes heavier. Similar observations by M. Bachimont on 4445 cases at Tourcoing gave an average of 220 grammes in favour of the children born in hospital. While in most European countries it is recognised how advisable it

is that a woman should abstain from any severe exertion for some weeks before and after child-birth, there is always the difficulty of providing her meanwhile with the necessities of life. Only in Germany and Austria-Hungary, where pecuniary aid is given in these circumstances, does the view as to the desirability of resting amount to much more than a pious opinion. In France, however, the Senate is now considering this question and M. Strauss appears to think that some attempt will soon be made to grapple with it in the only effective way—that is, by making rest compulsory and at the same time removing any objection to it by the granting of suitable allowances.

THROMBOSIS OF THE CAVERNOUS SINUS.

THROMBOSIS of the cavernous sinus is rare. Dwight and Germain recently reported four cases but could collect only 178 from literature.[1] In the *New York Medical Journal* of Feb. 27th Dr. Henry Roth has recorded three cases; the patients were under the care of Dr. Parker Syms at the Lebanon Hospital, New York. In each case the cause was trivial—a carious tooth, a furuncle on the nose, and a furuncle on the upper lip. The infective agent usually is the staphylococcus aureus or albus or the streptococcus. The primary lesions which may be followed by thrombosis of the cavernous sinus are furuncles, carbuncles, cellulitis, facial erysipelas, dental caries, and alveolar abscess. Of the 182 cases studied by Dwight and Germain the eye was the source of infection in four cases, the nose in nine, the mouth in 14, the face in 34, and the lips in two. Phlebitis develops in the infected region and spreads up to the cavernous sinus, causing thrombosis which rapidly extends to the sinus on the opposite side or to the other basal sinuses. The thrombus breaks down and infected particles are carried into the general circulation, producing pulmonary infarction and pyæmic abscesses. Meningitis or cerebral abscess may develop by contiguity of tissues. The symptoms of thrombosis of the cavernous sinus are frequently obscured by those of the primary lesion or of co-existing meningitis and cerebral abscess. The severity of the previous illness increases. The temperature becomes very high and there may be pronounced remissions, especially if there is pyæmia, which is associated with chills and profuse perspiration. The pulse usually is rapid but as a result of pressure on the brain may become slow. Dissemination of septic emboli may give rise to local signs, especially pulmonary ones. Headache is an early and prominent symptom, particularly when there is meningitis. Cerebral irritation produces vomiting. Convulsions occurred in one of Dr. Roth's cases. Delirium is marked and may terminate in mania. Stupor develops and is followed by coma which may prove fatal. Stasis in the ophthalmic vein produces pathognomonic signs—swelling of the eyelids and ecchymosis and œdema of the skin and conjunctiva on the affected side. The superficial veins of the face may be dilated and appear as painful and tender red lines. Proptosis begins soon after the appearance of the local signs. It is the result of stasis in the orbital vessels, which also causes dilatation of the retinal veins; choked disc may be present towards the end; the cornea may be hazy and ulceration is not uncommon. Pressure on the motor nerves of the eye gives rise to diplopia and immobility of the eye. Sight may be lost. Photophobia, pain in the eye, and amblyopia may occur. The pupil is at first small; later it is fully dilated. As the thrombosis rapidly spreads to the opposite sinus the symptoms soon become bilateral. Some meningitis is almost constant but a differential diagnosis between thrombosis and meningitis may be made by the ocular and pyæmic symptoms described. The prognosis is very bad; the great majority of cases are fatal. The treatment is unsatisfactory. When the ocular symptoms occur the patients are usually profoundly septic and in a condition which precludes operation. Various operations are recommended, such as free incisions, drainage of the orbit, and enucleation of the eye-ball with curetting of the orbit. But these measures do not reach the seat of the trouble and can be of little value. The following is one of the cases related by Dr. Roth. A youth, aged 17 years, was admitted to hospital on July 22nd. Five days previously he noticed a pustular swelling on the left side of the upper lip. It was incised and drained. Three days later there were pain in the back of the head and stiffness of the neck. On admission there were a small crust on the upper lip, swelling of the left eyelids, and redness and twitching of the eyeball. On the 23rd the temperature ranged from 103·2° to 105° F. He complained of pain in the back of the head and became very delirious. There were rigidity of the post-cervical muscles and dilatation of the pupil. The right eye began to show the same signs—swelling, discolouration of the lids, and proptosis. On the 26th the temperature was 105·2° and the pulse was 84; there were convulsions of the left hand and Cheyne-Stokes respiration, rigidity of the neck, and retraction of the abdomen, and death took place. A necropsy was refused.

[1] Boston Medical and Surgical Journal, May, 1902.

RECENT WORK ON THE "N" RAYS.

WHATEVER incredulity may be expressed in England in regard to the so-called "n" rays French *savants*, notably M. Blondlot who first described these emanations and M. Augustin Charpentier, are still freely contributing papers on the subject to the Académie des Sciences. The most recent development is the discovery by M. Blondlot of certain new rays allied to the "n" rays and, like them, emitted by the Nernst lamp. For these the name "n_1" rays is suggested and they exhibit the peculiarity that whereas the "n" rays increase the brightness of a suitable feebly luminous surface the "n_1" rays diminish it. M. Charpentier's investigations have been chiefly directed to the physiological action of rays of both kinds. Having found, as mentioned at p. 594 of THE LANCET of Feb. 27th, that the acuity of vision is augmented by the action of the "n" rays, he has tried their effect upon the senses of smell, taste, and hearing. The organs of all these senses have their activity stimulated by the rays when these are brought to bear upon the nasal mucous membrane, the tongue, or the ear respectively, and in addition to this the sense of smell can be affected by bringing a source of the rays opposite a point immediately above the glabella or, better, by placing it upon the top of the head a little in front of the bregma. Whether, as in the cases of sight and smell, the effect of greater intensity of taste and hearing can be produced by the action of the emanations upon the brain through the skull is yet undecided, but the difficulty is probably only that of localising the appropriate centres. On repeating his experiments with the still newer "n_1" rays M. Charpentier found that, as in the case of the luminous screen, results opposite to those already stated were obtained, there being a general decrease in sensitiveness of the organs concerned.

THE SPOROZOA IN RELATION TO DISEASE IN MAN AND ANIMALS.

IN his third lecture,[1] which was delivered at University College, London, on March 14th, Professor E. A. Minchin dealt with the coccidia, a class of sporozoan parasites which infest worms, molluscs, and vertebrates, and which, owing to their great fecundity and power of multiplication, often produce disease in the host. The name "coccidia" had

[1] An abstract of the first and second lectures was published in THE LANCET of March 12th, p. 736.

been for long misused by pathologists to include various forms of "cell inclusions" seen in cancerous and other tumours but which had nothing to do with the parasitic sporozoa of the class coccidia. True coccidia were found in the epithelium of the alimentary canal as the result of casual infection by food. The parasites multiplied and invaded the epithelial cells of the intestine in large numbers, while some passed into the liver and bile-duct or were carried by the circulation into the kidneys—e.g., the coccidium of the frog. Schaudinn recently discovered and described a coccidium in the mole. This parasite occasionally proved fatal to its host owing to the enormous extent to which it multiplied within the tissues of the latter by a process of fission repeated for several generations. The epithelium of the gut was considerably destroyed and the animal suffered from diarrhœa and great prostration or lethargy. The young coccidia (merozoites) were motile and capable of penetrating here and there into the tissues of the host. When, however, the tissues and phagocytic powers of the host were adequate to prevent the invasion of the merozoites the latter developed a new (sexual) stage of life, giving rise to two kinds of sexual cells—viz., microgametes and macrogametes. The former were small, motile, flagellated cells, corresponding to the sperm cells of plants and animals; the latter were large quiescent cells, the equivalent of ova. The gametes united one with another and gave rise to fertilised ova. The fertilised ova developed a thick protective cyst wall within which segmentation of the proptoplasm took place. These growing oocysts passed out into the fæces of the animal. Each oocyst formed four sporoblasts, each of which further divided into two sporozoites. Eight germs or sporozoites were thus produced from each fertilised ovum. These germs remained within the cyst and when, as the result of casual infection, the oocysts entered into the alimentary canal of a new host (rabbit or other animal) the cyst wall was dissolved by the pancreatic juice and the spores were set free to start a fresh cycle of infection. The male gametes in some of the coccidia were elongated and moved by serpentine undulations. They were, moreover, unprovided with flagella and in both these respects they resembled the malarial parasite. The coccidia were, on the whole, not really dangerous to man but occasionally they were fatal to animals. According to the numerical features of their spore formation the coccidia were divided into four classes—viz., asporocystidea, disporocystidea, tetrasporocystidea, and polysporocystidea.

IRISH MEDICAL SCHOOLS' AND GRADUATES' ASSOCIATION.

THE Irish Medical Schools' and Graduates' Association celebrated St. Patrick's Day by holding its annual festival dinner at the Trocadéro, Piccadilly-circus, London, the President of the association, Surgeon-General C. Sibthorpe, I.M.S., being in the chair. Covers were laid for over 230 guests and the presence of many ladies helped to make the function a conspicuous success. The overflowing hospitality of this Irish association disarms criticism but some of the speeches were a trifle longer than necessary though it must be admitted that the native wit of the orators saved them from becoming wearisome. The association is in an exceedingly prosperous condition, the number of members reaching nearly 900, and great activity has been displayed in carrying on the social and other objects of the association. The toast list, which was a long one, was headed with the words "Brevity is the soul of wit." After the usual loyal toasts Mr. P. J. Freyer was introduced to the chairman by Dr. H. Macnaughton Jones and presented with the Arnott memorial medal for his services in the advancement of surgery. The toast of "Our Defenders" was proposed by Mr. Kendal Franks and was responded to by Surgeon-General Sir J. N. Dick, R.N. Surgeon-General G. J. H. Evatt, who also replied, made a vigorous onslaught on the new scheme for the reform of the War Office and deplored the fact that it was not proposed that there should be a representative of the Army Medical Department on the Army Board. Surgeon-Captain R. Jocelyn Swan also replied to the toast and was followed by Dr. T. Gilbart Smith who, in a much applauded speech, gave the toast of "Our Guests," which was acknowledged by Mr. E. R. Henry and General Sir H. D. Prendergast, V.C. Sir Robert Anderson proposed "Ourselves," which was suitably acknowledged by the chairman who added some well-earned words of thanks to the honorary secretaries for their successful efforts.

THE SEPARATE EXAMINATION OF THE URINE OF THE TWO KIDNEYS.

IT is difficult to lay too much stress upon the importance of the surgeon being able to estimate the functional capacity of a kidney before advising excision of the same. Cases must be known to nearly every surgeon in which a kidney has been diagnosed as diseased and nephrectomy has been performed with the result that the patient has died because the only effective kidney has been removed. A typical case is the following. A patient was passing blood and pus with the urine and on palpation one kidney was found to be manifestly larger than the other. Tuberculosis of the kidney was diagnosed and the enlarged kidney was removed. On examination it was found to be perfectly healthy and its enlargement was due to vicarious hypertrophy to compensate for the other kidney which had atrophied, as was found at the necropsy. The examination of the mixed urines from the two kidneys can give no information as to their relative efficiency. This knowledge can only be gained by the separate examination of the urine from each kidney. The value of being able to obtain separate specimens of the two urines has for many years been recognised and many attempts have been made to collect separately the urine from each kidney, but they have been only attempts or little more. Catheterisation of the ureters is doubtlessly practicable and this operation is to some extent facilitated by the use of the cystoscope, but it requires a very high degree of skill only obtainable by prolonged practice, so that it is almost out of the reach of the general surgeon. It is certain that it is very rarely performed in this country. Cystoscopic observation of the character of the urine as it flows from the vesical orifice of each ureter can certainly give a little information as to the condition of the corresponding kidney, but the knowledge is limited to the naked-eye appearances and the view obtained is rapidly obscured by the clouding of the contents of the bladder. Clamping the ureter, first on one side and then on the other, has been employed to obtain separate specimens of the two urines, but the method is not free from risk and is, moreover, somewhat difficult of performance. In 1901 Dr. Luys, of the Lariboisière Hospital of Paris, devised a method whereby it is possible to separate in the bladder the urine from each kidney, and in the present issue of THE LANCET, p. 859, Mr. R. A. Bickersteth of Liverpool describes the instrument and gives an account of some cases in which it has proved useful. The essence of the device is the placing of a mesial rubber curtain in the floor of the bladder so that the urine from each kidney is carried off separately in one compartment of a double-channeled catheter. The value of the instrument depends chiefly on the thoroughness with which the separation can be effected, for it is clear that if the "curtain" is not pressed firmly on the floor of the bladder some mixing of the urines must take place. It seems certain that the instrument is effective and that it does not require very much practice to use it satisfactorily, though, of course, experience is needed to obtain

the best results. Mr. Bickersteth's article gives a very full account of the instrument and we may mention that a description of it is to be found in Henri Hartmann's "Travaux de Chirurgie," which we noticed a few weeks ago. The value of the instrument in certain cases where important renal operations are proposed cannot be gainsaid and the skill required in its manipulation is by no means great. It is evident, therefore, that this device deserves a careful trial at the hands of those competent to judge and should it prove capable of preventing such surgical catastrophes as those we have referred to above it will receive a hearty welcome from the surgeons of this country. We consider that Mr. Bickersteth has done well in introducing this ingenious instrument to English readers.

THE CASE OF DAKHYL v. LABOUCHERE.

WE have received a letter from Messrs. Hastie, solicitors for the plaintiff, saying that our statement that leave has been granted to the editor of *Truth* to appeal is incorrect. "What is in contemplation," they say, "is an application to the Court of Appeal for a new trial and the only order that has been made with regard to that is that on the defendant within seven days bringing the damages into court there shall be a stay of execution so far only as those damages are concerned until the application comes on before the Court of Appeal." Messrs. Hastie accuse us of having implied things about the verdict or about the judge or about both. We did nothing of the kind.

A TESTIMONIAL TO DR. CONSTANTINE HOLMAN.

AT a meeting held on March 22nd at the house of Sir William H. Broadbent, Bart., it was unanimously decided that funds should be raised for a testimonial to Dr. Constantine Holman. It was further decided that the testimonial should take the form of a reading room to be erected at Epsom College which should be called after Dr. Holman's name. Dr. J. H. Galton was elected treasurer of the fund and Mr. W. A. Berridge of Redhill, formerly a partner with Dr. Holman, as secretary. A number of subscriptions which have been already paid or promised were announced, including sums from Lord Rosebery, President of Epsom College, the President of the Royal College of Physicians of London, the President of the Royal College of Surgeons of England, the President of the British Medical Association, the President of the British Medical Benevolent Fund, the President of the council and the treasurer of the British Medical Association, the President of the South-Eastern branch of the British Medical Association, the Editors of THE LANCET, and the Editor of the *British Medical Journal*. An appeal is to be issued to members of the medical profession and a first list of subscriptions will appear in a future issue.

THE EPIDEMIOLOGICAL SOCIETY: DR. REINCKE ON ENTERIC FEVER AND CHOLERA IN HAMBURG.

THE late Dr. W. H. Corfield was through ill-health rarely able to take his place as president of the Epidemiological Society, to which he had been elected about a year before his death. He, however, gave practical evidence of the interest he felt in its work by arranging with several eminent epidemiologists and hygienists for papers on subjects with which by reason of their official position they were specially qualified to deal. The masterly analysis of the epidemiology of enteric fever and cholera in Hamburg and Altona by Dr. Reincke, medical officer of health and port sanitary officer of Hamburg, read at the last meeting, a full report of which will appear in an early issue of THE LANCET, was one of these, and a similar paper will be read in May by Dr. Pislor of Berlin on the experience of that city. It has long been the desire of the council to give so far as possible an international character to the society and to inaugurate a study of the hitherto untouched field of comparative epidemiology. Dr. Reincke's paper was profusely illustrated by maps and diagrams which, by the courtesy of Dr. B. A. Whitelegge, the President of the Epidemiological Society, and the council of the society, have been placed at our disposal. Readers of THE LANCET will remember that we sent a Special Commissioner to Hamburg in the year 1894[1] to investigate the sanitary conditions with regard to the outbreak of cholera in that city, for the large amount of trade between this country and Hamburg makes the sanitary condition of the great German port of prime importance to Great Britain.

LARGE UTERINE AND OVARIAN TUMOURS.

Sir Spencer Wells pointed out many years ago—viz., in 1872—"that it is only since ovariotomy has become a familiar operation the fact that uterine tumours frequently attain a very large size has become generally known." Indeed, some of the largest tumours ever met with are fibromata or fibro-cystic tumours of the uterus. In his book on "Uterine Tumours" Roger Williams mentions and illustrates the case recorded by Severenau of Bucharest. The patient, who measured six feet round the abdomen at the level of the umbilicus, was the possessor of a cystic myoma weighing 195 pounds; 17½ pounds of coffee ground sediment were contained in the cystic portion of the tumour. Another huge fibro-cystic tumour is that recorded by Hunter of New York which measured 4 feet 7 inches in length and weighed 140 pounds. The patient, a single woman, 53 years of age, measured 62 inches round the abdomen and Atlee, who had seen her 21 years before, had diagnosed a fibro-cystic tumour of the uterus. The case is remarkable in that the patient had no symptoms beyond those due to the pressure of this huge tumour. In Macintyre's celebrated case the patient was a woman only 38 years of age. The circumference of the abdomen just below the umbilicus was 50 inches, just below the mammæ it was 35 inches, while the distance between the xiphoid cartilage and the symphysis pubis was 32 inches. Before the operation the woman weighed 199½ pounds and after removal of the tumour she was found to have lost 93½ pounds in weight. Unfortunately she died from septicæmia on the fifth day after operation. The tumour was a solid fibroma of the uterus and had not undergone any cystic change. Stockard describes the case of a negress who had a fibro-cystic tumour 135 pounds in weight. The abdominal girth was 68 inches while the umbilicus was stretched to the extent of five inches in diameter and three inches in length. When first seen the tumour reached to below the patient's knees and was so heavy that she could neither walk nor work. The growth was first noticed at the age of 41 years and the patient was tapped at the age of 47 years, a large quantity of fluid being removed. A few years later she was again tapped, some 71 pints of fluid being drawn off, but unfortunately she died from exhaustion on the sixth day after the operation. Roger Williams also mentions the case recorded by Platonoff who performed laparotomy on a patient, aged 55 years, for an interstitial fibroid tumour weighing over 90 pounds. It was found to be impossible to remove the tumour on account of very numerous adhesions while its great size prevented the closure of the abdominal wound. Unsuccessful attempts were subsequently made to remove it with Paquelin's cautery but gangrene supervened and the patient died. When we turn to the published accounts of ovarian tumours not only do we find that they have been met with of even

[1] THE LANCET, July 7th, 1894, p. 46.

greater size than the tumours to which we have referred but the amount of fluid that has been removed at repeated tappings is almost incredible. Amongst the older writers Ford mentions a case of ovarian dropsy in which 2786 pints of water were withdrawn, while Martineau describes a most remarkable case of 25 years' duration in which paracentesis was performed 80 times and 6630 pints of fluid were removed. The largest ovarian tumour ever successfully removed is that recorded by Elizabeth Reifsynder, a lady medical missionary in China. The patient, a young married woman, aged 25 years, had been married ten years and had had no children. When seen she measured 4 feet 8 inches in height, her greatest girth was 69½ inches, while the measurement from the ensiform cartilage to the pubes was 39 inches. The tumour contained 22 gallons of fluid and the sac weighed six and a half pounds, or a total weight of about 182½ pounds. The patient made a good recovery. The same practitioner also successfully operated upon a patient with an ovarian tumour weighing 80 pounds. In a case operated upon by Alonso Garcion the patient, a woman, 28 years of age, had an abdominal girth of 69 inches. 115 pounds of fluid were removed from an ovarian tumour by tapping and then the sac and its contents, weighing 70 pounds, were removed by operation. Unfortunately the patient died two days after the operation. Dayot successfully removed an enormous ovarian cyst from a girl, 17 years of age. Its largest circumference was 71 inches and it contained 130 pints of a thick brown fluid. Cullingworth records the case of a large ovarian tumour weighing between 80 and 90 pounds removed from a girl, aged 16 years. She had been tapped three times previously. Numerous references to tumours of 70 pounds and upwards are on record, one being given at p. 868 of this issue of THE LANCET, and it is interesting to note that a tumour of about this weight was removed on the second occasion on which the operation of ovariotomy was performed.

THE medical officer of health of the Cape Colony states that for the week ending Feb. 27th no case of plague in human beings was reported throughout the colony. Dead rodents were found at Port Elizabeth and East London but in the Cape Town and Harbour Board area of 191 rats examined during the week none was affected with plague. As regards the Mauritius, a telegram from the Acting Governor, received at the Colonial Office on March 18th, states that for the week ending March 17th no case of plague was reported. Plague has broken out at Johannesburg, but the epidemic is apparently under control. The latest reports on the morning of March 24th state that 50 deaths have occurred.

A MEETING of the Therapeutical Society will take place on Tuesday, March 29th, at 4 P.M., in the Apothecaries' Hall, Blackfriars, London, E.C., to which every Fellow of the society may bring a lady visitor. Mr. W. Chattaway, F.I.C., will give a short description of Photography in Natural Colour, illustrated by lantern slides. There will also be an exhibition of books and plate from the Apothecaries' Company, of microscopes and spinthariscopes from Messrs. Beck and Co., and of various therapeutical appliances from Messrs. Evans and Wormull.

Dr. George Oliver will deliver the Oliver-Sharpey Lectures on Tuesday, April 12th, and Thursday, April 14th, at 5 o'clock, at the Royal College of Physicians of London. The subject will be "Recent Studies on the Tissue Lymph Circulation."

A SESSIONAL meeting of the Sanitary Institute will be held at the Parkes Museum to-day (Saturday, March 26th), at 11 A.M., when a discussion will take place on Municipal Re-housing, opened by Mr. W. B. Riley, F.R.I.B.A., superintending architect to the London County Council. Mr. Riley will be followed by Mr. E. Bond, M.P., and Dr. Louis C. Parkes, and general discussion is invited. Tickets for admission may be had on application to the secretary.

THE Worshipful Company of Goldsmiths have presented their Institute, site, buildings, and equipment to the University of London for the extension of the work of the University in the south of London.

Lieutenant-Colonel W. G. Macpherson, C.M.G., R.A.M.C., has been attached to the Japanese Army to report upon the medical arrangements.

PRESENTATION TO PROFESSOR J. W. BYERS.

THE severe ordeal through which Professor J. W. Byers passed in the early part of last year, when an action of a highly disagreeable nature, and likely to be most prejudicial to his professional position, was brought against him by a designing woman has served to emphasize the love and esteem in which he is held not only by his friends in Belfast but by the whole of the medical profession. The courage and straightforwardness with which he defended himself resulted in the complete rout of the enemy and a public victory of the cause of right. In addition to votes of congratulation which Professor Byers received in connexion with this action a public meeting was held in the Town-hall, Belfast, on May 30th, 1903, when the High Sheriff of Belfast occupied the chair and it was decided to present to Professor Byers a portrait in oils of himself, to be hung in the examination hall of Queen's College, Belfast, and to Mrs. Byers a replica of the portrait. Accordingly on March 18th last, in the great hall of Queen's College, Belfast, which was crowded with an audience of some of the most distinguished people in Belfast and the North of Ireland—medical colleagues, church dignitaries, teachers, ladies and gentlemen prominent in society, personal friends, and grateful patients—Professor Byers was presented with his portrait in oils painted by Henrietta Rae (Mrs. Normand), while Mrs. Byers was the recipient of a replica of the paintir g.

In the portrait Professor Byers is represented in his academic gown, wearing the red hood of a doctor of medicine and the purple hood of a master of obstetrics—an honorary degree conferred upon him by the Royal University of Ireland. The portrait is life-size, three-quarter length, and depicts its subject seated in a natural and characteristic attitude, turning] towards the spectator and holding in his right hand the academic cap. It is inclosed in a handsome gilt frame. The replica presented to Mrs. Byers is a smaller-sized reproduction of the larger portrait and has a decorative frame of the last century, with an ingenious glass covering which can be opened at will.

The Rev. Dr. HAMILTON (President of Queen's College), who occupied the chair, said that it seemed good to a number of friends and admirers of Professor Byers, not only in Belfast but throughout the province of Ulster, to indicate their respect and admiration for him in some way. He sketched Dr. Byers's history as a student of the college, afterwards in his professional life, and as a professor of the college since his return 11 years ago, and said: "As head of the college he was only stating the bare truth when he said that by the ability, assiduity, devotion, and zeal with which he had discharged the responsible duties of the chair to which he was appointed he had not only carried out the work in an admirable manner but had made the entire college his debtor."

Sir JAMES HENDERSON afterwards read the address in which the following passages occur: "You and your distinguished colleagues have enhanced the fame of the Belfast Medical School and have contributed in no small measure to its acknowledged eminence in science and skill. As one of the professors of our Queen's College you have not spared pains or cost to bring the latest discoveries and the most advanced knowledge to bear in the training of your students. By such

services, and by the ready help you give to benevolent and educational work, and recently by your labours in connexion with the erection and equipment of the Royal Victoria Hospital, you have laid all interested in the welfare and happiness of the people under obligation. But it is in the homes of your patients and friends that your finest qualities are most fully appreciated. There young and old alike are bound to you by the ties of affectionate regard."

In the course of his reply Professor BYERS said that he felt it to be an unspeakable honour to have his portrait placed in the same college with such men as the great masters—Andrews, a member of a distinguished Ulster clan who, apart from his scientific discoveries, rendered invaluable service in the early development of this college; M'Douall, who impressed all who were brought in contact with him with the unfathomable depth of his learning; Gordon, a man of extraordinary power of diagnosis as a surgeon who taught them the value of accuracy of observation; Nesbitt, who prided himself in demanding from his students exactness and elegance in the use of Latin and English phraseology; and last, but not least, one who was happily still with them, the *doyen* of the medical profession in Ulster—his venerated teacher, college colleague, and ever constant friend, Dr. P. Redfern. He appreciated very much the kind reference which had been made to his services on the construction committee of their new Royal Victoria Hospital. He had found it a pleasure to work with Belfast citizens, not only for suffering humanity, but for an object that was so essential to the Belfast medical school and one which had culminated in such a great success.

Professor BYERS having concluded his reply the Right Hon. Thomas Sinclair unveiled the portrait which the Rev. Dr. Hamilton accepted on behalf of Queen's College.

The Right Hon. THOMAS ANDREWS presented the replica to Mrs. Byers, wishing Professor and Mrs. Byers and their son and Mrs. Byers, senior, long life, health, happiness, and prosperity.

After several other speeches had been delivered the pleasant proceedings came to a conclusion.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 8706 births and 5781 deaths were registered during the week ending March 19th. The annual rate of mortality in these towns, which had been 17·5, 18·6, and 19·0 per 1000 in the three preceding weeks, further rose last week to 19·7 per 1000. In London the death-rate was 18·8 per 1000, while it averaged 20·1 per 1000 in the 75 other large towns. The lowest death-rates in these towns were 8·3 in Hornsey, 10·1 in Bootle, 11·8 in Hastings, 12·2 in Leyton, and 12·5 in East Ham, in Devonport, and in Grimsby; while the highest rates were 25·0 in Rotherham and in Stockton-on-Tees, 25·3 in St. Helens, 25·9 in Bury, 27·4 in Wigan and in Manchester, 29·4 in Hanley and in Derby, and 31·0 in Warrington. The 5781 deaths in these towns last week included 539 which were referred to the principal infectious diseases, against 420, 503, and 500 in the three preceding weeks; of these 539 deaths 188 resulted from whooping-cough, 180 from measles, 55 from diarrhœa, 53 from diphtheria, 37 from scarlet fever, 21 from "fever" (principally enteric), and five from small-pox. No death from any of these diseases was registered last week in Hornsey, Hastings, Ipswich, King's Norton, Smethwick, Derby, Bootle, Wigan, or Barrow-in-Furness; among the other towns the highest death-rates from these principal infectious diseases were recorded in Great Yarmouth, Norwich, Walsall, Wallasey, St. Helens, Warrington, Stockton-on-Tees, and Gateshead. The greatest proportional mortality from measles occurred in Walthamstow, Great Yarmouth, Norwich, St. Helens, Warrington, Bury, Salford, Rochdale, Burnley, Blackburn, and Leeds; from diphtheria in Great Yarmouth; from whooping-cough in Portsmouth, Walsall, Birmingham, Wallasey, St. Helens, Warrington, Bolton, Rotherham, Stockton-on-Tees, and Swansea; from "fever" in Stockton-on-Tees; and from diarrhœa in West Bromwich. The mortality from scarlet fever showed no marked excess in any of the large towns. Three fatal cases of small-pox were registered in Gateshead, one in London, and one in Leicester, but not one in any other of the 76 large towns. The number of small-pox patients remaining under treatment in the Metropolitan Asylums hospitals, which had been 31, 41, and 54 at the end of the three preceding weeks, had further risen to 74 at the end of last week; 26 new cases were admitted during the week, against five, 13, and 21 in the three preceding weeks. The number of scarlet fever patients in these hospitals and in the London Fever Hospital on Saturday last, March 19th, was 1624, against 1587, 1578, and 1601 at the end of the three preceding weeks; 176 new cases were admitted during the week, against 150, 153, and 192 in the three preceding weeks. The deaths in London referred to pneumonia and diseases of the respiratory system, which had been 322, 371, and 414 in the three preceding weeks, declined again last week to 375, but were 91 in excess of the number in the corresponding period of last year. The causes of 65, or 1·1 per cent., of the deaths in the 76 towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in West Ham, Bristol, Leicester, Salford, Hull, Newcastle-on-Tyne, and in 40 other smaller towns; the largest proportions of uncertified deaths were registered in Northampton, Birmingham, Liverpool, St. Helens, Warrington, Sunderland, and South Shields.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been 21·8, 21·2, and 21·5 per 1000 in the three preceding weeks, further rose to 23·0 per 1000 during the week ending March 19th, and was 3·7 per 1000 in excess of the mean rate during the same period in the 76 large English towns. The rates in the eight Scotch towns ranged from 18·5 in Edinburgh and 20·1 in Leith to 26·9 in Greenock and 28·1 in Dundee. The 762 deaths in these towns included 24 which were referred to whooping-cough, 23 to measles, 18 to diarrhœa, eight to "fever," seven to small-pox, three to diphtheria, and two to scarlet fever. In all, 85 deaths resulted from these principal infectious diseases last week, against 79, 89, and 68 in the three preceding weeks. These 85 deaths were equal to an annual rate of 2·6 per 1000, which was 0·8 per 1000 above the mean rate last week from the same diseases in the 76 large English towns. The fatal cases of whooping-cough, which had been 21, 36, and 21 in the three preceding weeks, rose again last week to 24, of which eight occurred in Dundee, six in Glasgow, five in Aberdeen, two in Edinburgh, and two in Leith. The deaths from measles, which had been 27, 22, and 20 in the three preceding weeks, rose again to 23 last week and included 15 in Glasgow and four in Dundee. The fatal cases of diarrhœa, which had been 11, 19, and 13 in the three preceding weeks, rose again last week to 18, of which nine were registered in Glasgow, six in Dundee, and two in Edinburgh. The deaths referred to different forms of "fever," which had been six, two, and one in the three preceding weeks, rose again to eight last week and included six in Glasgow. The fatal cases of small-pox, which had been six, three, and five in the three preceding weeks, further rose last week to seven, of which four occurred in Glasgow and three in Greenock. The deaths attributed to diseases of the respiratory organs in these towns, which had been 165, 155, and 156 in the three preceding weeks, further rose last week to 185, and were 51 in excess of the number in the corresponding period of the preceding year. The causes of 30, or nearly 4 per cent., of the deaths registered in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 27·2, 26·4, and 28·3 per 1000 in the three preceding weeks, declined again to 27·7 per 1000 during the week ending March 19th. During the past four weeks the death-rate has averaged 27·4 per 1000, the rates during the same period being 18·3 in London and 18·8 in Edinburgh. The 201 deaths of persons belonging to Dublin registered during the week under notice showed a decline of five from the number in the preceding week and included 20 which were referred to the principal infectious diseases, against 15, 13, and 11 in the three preceding weeks; of these, 13 resulted from whooping-cough, four from measles, one from diphtheria, one from "fever," and one from diarrhœa, but not any from either small-pox or scarlet fever. These 20 deaths were equal to an annual rate of 2·8 per 1000, the death-rates

last week from the principal infectious diseases being 1·8 in London and 0·8 in Edinburgh. The fatal cases of whooping-cough, which had been 11, ten, and six in the three preceding weeks, rose again last week to 13. Four deaths were attributed to measles last week, against none in either of the two preceding weeks. The 201 deaths in Dublin last week included 40 of children under one year of age and 49 of persons aged 60 years and upwards; the deaths of infants were slightly in excess of the number in the preceding week, while those of elderly persons showed a marked decline. Five inquest cases and six deaths from violence were registered, and 76, or more than a third, of the deaths occurred in public institutions. The causes of 11, or more than 5 per cent., of the deaths registered in Dublin last week were not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Fleet Surgeons: J. L. Smith to the *Exmouth*; D'A. Harvey to the *Queen*; H. R. Osborne to the *Russell*; J. C. Dow to the *Revenge*; and J. Moore to the *Prince of Wales*. Surgeons: M. H. Knapp to the *Prince of Wales*; N. J. Roche to the *Russell*; E. R. L. Thomas to the *Exmouth*; and A. McCloy to the *Revenge*.

In accordance with the provisions of Her late Majesty's Order in Council of April 1st, 1831, Staff Surgeon Henry Baker Hall has been allowed to withdraw from His Majesty's Naval Service with a gratuity.

ROYAL ARMY MEDICAL CORPS.

Lieutenant Colonel G. T. Trewman is placed on temporary half-pay on account of ill-health (dated March 17th, 1904).

IMPERIAL YEOMANRY.

The Duke of Lancaster's Own: Harold Thorp to be Surgeon-Lieutenant (dated March 19th, 1904).

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

The Leeds Company: Herbert John Robson to be Lieutenant (dated March 19th, 1904). The Woolwich Companies: Lieutenant E. B. Dowsett resigns his commission (dated March 19th, 1904).

VOLUNTEER CORPS.

Royal Garrison Artillery (Volunteers): The Highland: Surgeon Captain G. A. Lang resigns his commission (dated March 19th, 1904). 3rd Middlesex: Surgeon-Captain P. Wood resigns his commission (dated March 19th, 1904) 1st Suffolk and Harwich: Surgeon-Lieutenant A. Y. Pringle to be Surgeon-Captain (dated March 19th, 1904).

MILITARY HOSPITAL REFORMS.

It is stated that the Army Hospitals Committee is now considering a scheme of hospital reform which proposes to deal with military hospitals on the principle of centralisation, classifying them into three grades. Those of the first grade, such as Aldershot, Devonport, and Salisbury Plain, are to remain and to be equipped fully in every particular. The second grade will also continue and be made complete in themselves but will not have quite as full equipment as those of the first grade. Hospitals such as Pembroke Dock, Preston, and Warley will be graded in the second class. Third grade hospitals such as exist where garrisons are less than 600 strong will, many of them, be closed and converted into reception stations for non-transportable cases and others into convalescent homes. By the adoption of this system military patients will be dealt with under three headings. 1. Those able to travel without risk will be sent to the nearest first or second grade hospital. 2. Those suffering from acute illness or severe injury will be dealt with at a first or second grade hospital, when one exists on the spot, or if one does not exist arrangements will be made with a civil hospital. If no civil hospital exists a small reception hospital will be provided to deal with cases which cannot be removed. 3. Infectious cases will be dealt with at a first or second grade hospital, or when these do not exist at a civil hospital.

DEATHS IN THE SERVICES.

Surgeon-General Henry Cayley, I.M.S., C.M.G., retired, in his seventieth year. He served in the Indian Medical Service during the Indian Mutiny and subsequently became a professor at the Army Medical School, Netley. He was employed during the late war in South Africa with the Scottish National Red Cross Hospital (mentioned in despatches) and received the C.M.G. for his services at the front. He retired in 1887.

Lieutenant Colonel Edward Ferrand, I.M.S., at Peshawar, in his fifty-fourth year. He entered the Indian Medical Service in 1875 and served with the Burmese Expedition of 1886–89 (medal with clasp), in the campaign on the North-West Frontier of India in 1897 98 (medal with two clasps), and in the Tirah Expedition. During the North-West Frontier campaign he was engaged in the operations on the Samana, in the Kurram Valley, 1897, and in the relief of Gulistan (clasp).

THE MORTALITY IN THE SOUTH AFRICAN WAR.

The *Broad Arrow* states: "The total casualties of officers in the South African war, as stated by Mr. Arnold-Forster in the House of Commons on the 2nd inst. in reply to a question by Dr. Farquharson, are, it is feared, incorrect. The Secretary of State for War is reported to have given the numbers as: officers killed or died of wounds, 793; died of enteric, 183; and from other diseases, 223; or a total of 1199. In the *Last Post* the names of all officers killed or died of wounds or disease give a total of 1148. In addition, the *Last Post* records the names of seven civil surgeons (among them Sir William Stokes and Professors Jones and Hughes) who died of disease, and if the names of these gentlemen are included the total would be 1155. Both figures cannot be correct."

LOSS OF A SUBMARINE.

The loss of the submarine A 1 with her crew of three petty officers and six men while engaged in the submarine manœuvres at Portsmouth on March 18th will draw attention to the fact that even in times of peace our sailors may be subjected to risks usually only likely to be incurred in time of war. Until the vessel is raised it can only be surmised that the A 1 came into collision with the *Berwick Castle* of the Union Castle line. As soon as the disaster became known expressions of sympathy were sent to the Commander-in-Chief at Portsmouth from the King and Queen and other members of the Royal Family.

ENTERIC FEVER AT BULFORD CAMP.

Surgeon-General J. A. Clery, the principal medical officer of the 2nd Army Corps, visited Bulford camp on March 16th in connexion with the inquiry now proceeding respecting an outbreak of enteric fever in the lines of the Bulford Mounted Infantry Battalion. Lieutenant-Colonel A. M. Davies, R.A.M.C., is also engaged on the inquiry. It is reported that the generally accepted cause of the outbreak is that it has been imported.

Lieutenant-Colonel W. G. Macpherson, C.M.G., R.A.M.C., has been attached to the Japanese Army to report upon the medical arrangements.

Correspondence.

"Audi alteram partem."

UNFOUNDED CRIMINAL CHARGES AGAINST MEDICAL MEN.

To the Editors of THE LANCET.

SIRS,—The dastardly false charge of indecent assault preferred against Dr. John Templer Crosby Conry of North Kensington by a young female errand girl in his employ is one more illustration of the dangers to which we medical men are exposed at the hands of conscienceless and unprincipled women. The case probably had its origin in spite and was afterwards prosecuted with the idea of extorting money by others who thought they saw in it a way of easily acquiring means which they were too lazy honestly to work for.

It is unnecessary to go into the details, which were fully reported in the daily and local newspapers, and it is sufficient to say that the grand jury unanimously ignored the charge. Meanwhile, Dr. Conry, who is my nearest medical neighbour, a man of unblemished reputation, with whom I have been on most friendly terms since he commenced to practise here some years ago, has, in order to

meet so shameful a charge, been put to a very considerable expense in the matter of law costs which, as a matter of fact, have amounted to no inconsiderable part of a year's income from practice in the poor district in which we live and work. This does not take into consideration the damage to a practice involved in such a charge (although disproved up to the hilt), to say nothing of the mental suffering necessarily undergone by a sensitive man.

The medical profession has always generously responded to any call for help on behalf of a brother so situated, no doubt remembering that a similar misfortune may at any time happen to any one of themselves. I venture, therefore, to appeal to the members of a great, generous, and unselfish body of men to come forward and with contributions according to their means assist in lightening the load.

I should be willing to act as treasurer of the fund in conjunction with any other medical man who might be nominated to act with me.—I am, Sirs, yours faithfully,

EDWIN T. ENSOR,
Poor-law Medical Officer, No. 2 District of Kensington.
162, Ladbroke-grove, North Kensington, W.,
March 17th, 1904.

We, the undersigned medical practitioners practising in the neighbourhood, entirely agree with Dr. Ensor's proposal and hereby endorse his action in this matter.

WALTER L. ROBERTS,
60, Cambridge-gardens, North Kensington, W.
H. WRANGEL CLARKE,
67, St. Quintin's-avenue, North Kensington, W.
A. K. THOMSON,
65, Lancaster-road, North Kensington, W.
WILLIAM ROBERTS,
79, Cambridge-gardens, North Kensington, W.
E. AUGUSTUS HOUCHIN,
79, Cambridge-gardens, North Kensington, W.
WALTER J KILNER,
218, Ladbroke-grove, North Kensington, W.
J. C. SHEEHAN,
130, Lancaster-road, W.
JOHN J. ATTERIDGE,
121, Ladbroke-grove, W.
J. ALEXANDER GENTLE,
26, Colville-square, W.

THE DEATH-RATE IN WHITECHAPEL.

To the Editors of THE LANCET.

SIRS,—If we consider the conditions of the population of Whitechapel and the death rate and then the method of relief—or rather non-relief—by the Whitechapel guardians of the poor I think we shall see there is, at least, a case for inquiry. The matter is one of the highest importance not only to Whitechapel but to the country at large, for the Whitechapel Union system has been for many years held up as an example to all other unions.

1. *Conditions and death rate.*—In Mr. Charles Booth's final volume (page 17), "Whitechapel, Spitalfields, &c.," while only twenty-second among the metropolitan districts in order of poverty, is placed seventh in order of death rate. This district is sixth in crowding, but Mr. Charles Booth remarks, "Though the poverty is considerable the crowding is far greater, due to the low standard of even well-to-do foreign Jews." "In Spitalfields the percentage of overcrowding reaches 67 per cent." The presence of the Jews increases the birth-rate—Whitechapel, &c., is No. 1 in this respect—and diminishes the death-rate. Now the Jews in Whitechapel form more than one-half—probably they are about two-thirds—of the population. If, then, we consider only the non-Jewish population, what must be their death-rate? It must be very high and it is evident, from what has been said above, that neither poverty nor overcrowding will account for its height.

2. *Methods of relief.*—The method of relief in Whitechapel was explained by Canon Barnett of St. Jude's, Whitechapel. He said that the guardians caused it to be known that they "would not give out-relief" and that anyone "would be foolish to apply for it." Of course, by these means the guardians choked off applications. The number of persons in receipt of out relief (including medical relief) was in 1892 (population 74,462) 360 and in 1901 (population 78,648) only 43. We are informed by Sir William Chance that of these 43 one-third were boarded-out children and the other two thirds persons in receipt of medical relief only. He adds, "The importunate widow has disappeared altogether." Of course, she has disappeared from the guardians' boardroom, for it would be "folly for her to apply." But what has been the effect of this system on the lives and health of the widows and their children and of such other children as would in ordinarily managed unions have received out-relief or medical relief according to the necessities of the case? It should be understood that Whitechapel has a large number—about 1400—indoor paupers in workhouse, school, and infirmary; and no doubt if it were not for the number of persons taken into and the care given to them in those very costly institutions the death-rate of the Christian population of Whitechapel would be even higher than at present. There is, too, in Whitechapel a certain amount of organised charity, but there is charity (organised or otherwise) in every union, and it cannot make up for the ordinary supply of medical and other out-relief. I have been speaking of the non-Jewish population only, for the Jews when in poverty are relieved by their own voluntary society which is known by the somewhat misleading name of "the Jewish board of guardians"; consequently, the Jews only come to the legal board of guardians for medical out-relief or treatment in the infirmary. The Jewish board gives its assistance to the Jews in the form of out-relief.

3. The facts above stated plainly show that there ought, in the first instance, to be an inquiry into the "Gentile" death-rate (total and infant) in Whitechapel and St. George's-in-the-East; and if (as I anticipate) the rate is higher than can fairly be attributed to other conditions an inquiry should be made into the effect of the Whitechapel system of relief.

I am, Sirs, yours faithfully,
March 19th, 1904. J. THEODORE DODD.

THE ETIOLOGY OF SMALL-POX.

To the Editors of THE LANCET.

SIRS,—The horror inspired by small-pox has naturally inclined people to seek for some short cut for getting rid of it instead of ascertaining the immutable laws of nature on which it depends. But the time has gone by for telling people that "smoke goes up a chimney by suction" or that "nature abhors a vacuum." It will not do to tell us that the disease in question has originated from a stray microbe in Noah's ark or that somehow or other a specific germ created or evolved itself under such conditions as can never occur again. Bacteriology has now been in existence long enough to enable us to find such a noxious entity if there is one; and if there is not it is our business to find out what are the vital changes which must take place before the series of phenomena known as "small-pox" can be produced. Analogy would lead us to think that even enteric fever itself is only a vital effort to throw off by the intestinal mucous membrane the same elements as exist in the pustules of variola, as shown in post-mortem examinations, and that the subsequent danger of perforation, so much dreaded, is suggestive of the breaking down of such pustules by actual ulceration.[1] Another remarkable change which has been observed in all fatal cases which have been tabulated with sufficient accuracy is that the kidneys throw off a superabundance of urea and an excess of carbonic acid, and that an analysis of the pustules themselves shows them to contain usually urate of soda and ammonia with carbonate of lime. If we suppose, then, that during the incubation of the disease the uric acid of the blood is converted into carbonic acid, ammonia, and water, it then seems probable that the undue evolution of carbonic acid may have a tendency to exclude chloride of sodium from the circulation, thus promoting the oxygenation of albumin and the forming of derivative albuminoids and other elements of decay. Here, then, we have the possible origin of the purulent excreta which form the *materies morbi* of small-pox.

I just throw out these hints not because I think that medicine is best based upon chemical philosophy but because something like a rational explanation is needed before legislative measures are adopted and because I do not see that a germ which cannot be isolated furnishes such an explanation. Not to occupy your valuable space too long, in the absence of any evident interest on the part of the profession I wish to say that so long as an intelligent opposition exists on the part of many educated men it is best to offer abundant professional facilities for the complete discussion

[1] See the illustrated work of Professor Germann of Leipsic and the writings of Dr. Bayard of Cirey, Haute-Marne, France, on Vaccination, A.D. 1869.

of the best methods of dealing with every form of infectious or notifiable disease.

I say nothing at present upon the statistical, legal, social, and political aspects of the vaccination question but content myself with remarking that neither vaccination nor "isolation" can be expected to solve the problem of how to get rid of variola or even to reduce its incidence to any considerable extent, whilst the use of various hygienic means have certainly been beneficial just to the extent to which they have been fairly tried.—I am, Sirs, yours faithfully,

EDWARD HAUGHTON, M.D. Edin.

Upper Norwood, S.E., March 20th, 1904.

BATTLE OF THE CLUBS IN SOUTHAMPTON.

To the Editors of THE LANCET.

SIRS,—My attention has been drawn to a paragraph in the "Battle of the Clubs in Southampton" which stated that the Southampton and District Medical Federation was founded by the Dock Provident Society. This statement is incorrect, as the society has not, neither did it at any time have, any interest in the formation of the federation. The Dock Provident Society elected its surgeon, who was residing in the district some time before the formation of this federation. It is true that two members of the Dock Society attended the preliminary meetings of the federation, believing in the principle of it, of which they had a right as members of another friendly society, but they had no authority or sanction from the Dock Society in any way. I trust, Sirs, you will find room for this contradiction.

I am, Sirs, yours faithfully,

MASON J. READ,
Secretary, Dock Provident Society.

Southampton, March 15th, 1904.

*** The secretary to the Dock Provident Society says that the surgeon "was residing in the district some time before the formation of the federation." The surgeon in question has informed us that he applied for the post from his London address because he had not begun to occupy his house in the district. We leave these gentlemen to settle the discrepancy outside our columns.—ED. L.

PREVENTION OF INFECTIOUS DISEASE IN BATH.

To the Editors of THE LANCET.

SIRS,—I have read with interest the able and courteous letter of Dr. J. T. Neech in THE LANCET of March 19th, p. 833, in which he apparently differs from the view that I take in my letter in THE LANCET of March 12th, p. 755, as to a legal point in reference to infectious diseases. If Section 126 of the Public Health Act, 1875, is taken alone I think that Dr. Neech would be quite right. The question, however, is how far has this Act been defined and modified by subsequent legislation, and, surely, in forming an opinion upon the present question it must be read and construed with the Act of 1889. At the time the 1875 Act was passed it was very uncertain and indefinite as to what diseases were dangerous and infectious. As Dr. Neech happily points out there is, taking the Act of 1875 alone, a delightful vagueness as to what is and what is not a dangerous and infectious disease. For instance, he himself does not think that mumps should be included in the list but another medical man might conceivably think it should. So also with consumption and influenza. By most of us these are now looked upon as both dangerous and infectious diseases. The latter, however, was not known in this country in 1875 as it has been since and our views on the infectious nature of the former have also progressed since that date. This vagueness and uncertainty is cleared up by the subsequent Act of 1889 which gives express powers to the urban sanitary authority to decide in their own town what diseases over and above those mentioned in Section 6 are to be regarded as dangerous and infectious.

Now if the sanitary authority applying the Acts of 1875 and 1889 decline to include in the schedule certain diseases say whooping cough and measles, how can that same authority turn round and prosecute a person on account of these same diseases being dangerous and infectious when they themselves have decided that they consider them neither the one nor the other? The authority would be placing themselves in the ridiculous position of suggesting that a private individual must know what diseases are "dangerous and infectious" and ought to be prosecuted, although they themselves presumably did not know enough to schedule these diseases. In short, the sanitary authority having by their powers under the Act of 1889 taken upon themselves to decide in their area what diseases are dangerous and infectious, with what fairness could they prosecute for diseases outside their schedule? The penalties, then, attached to Clause 126 of the 1875 Act for exposure whilst suffering from "dangerous infectious" diseases cannot, I think, be held to apply to diseases not included under Section 6 of the subsequent Act of 1889. Whether Dr. Neech will agree with my view of the law I do not know, but I think he will allow that it is practical common sense.

I am, Sirs, yours faithfully,

Bath, March 20th, 1904. PRESTON KING, M.D. Cantab.

To the Editors of THE LANCET.

SIRS,—I was much interested in a letter on the above subject in THE LANCET of March 12th, p. 755, by Dr. Preston King, which seemed a clear case of the French proverb, "He who excuses accuses." It seems a most regrettable thing that the work of an "energetic and most efficient medical officer of health" should be "pin-pricked" by one of his own profession on his committee. With many years' experience of health committees I have not seen a similar instance. That the placing of measles and whooping-cough on the notifiable schedule would make them "dangerous and infectious" seems altogether an anachronism. Dr. Preston King has no right to assume that these diseases are not included under "any dangerous infectious disease," as he knows as well as I do that they are two of the most infectious and dangerous diseases known.

It would almost seem as if he was anxious for these diseases to run riot in Bath which seems all right for a health resort. I contend that it is illegal to send infectious cases in a public carriage unless proper disinfection is performed afterwards. What is proper disinfection of a padded cloth-lined cab, I wonder? I could recount various instances where practitioners have sent infectious cases in cabs, neglecting altogether to have them disinfected. The policy of trying to stop bacterial diagnosis in doubtful diphtheria is either one of extreme penury adopted by the small shopkeeper very occasionally on a health committee but not usually by a medical man, or the policy of "the ostrich with his head under the sand." I am, Sirs, yours faithfully,

Birmingham, March 16th, 1904. M.D., D.P.H.

ASTIGMATISM AND "EYESTRAIN."

To the Editors of THE LANCET.

SIRS,—In connexion with the correspondence which has lately appeared in your columns and more particularly with reference to the letter of Dr. G. M. Gould (March 12th) and that of Mr. R. Brudenell Carter (March 19th) it is interesting to recall some observations made by Dr. J. Hughlings Jackson 27 years ago in his address entitled "Ophthalmology in its Relations of General Medicine," being the annual oration delivered before the Medical Society of London and published in THE LANCET on May 12th, 1877, p. 674.

In some cases of abnormal refraction there is, said Dr. Jackson, a simulation of brain disease, or, at any rate, patients who only want appropriate glasses are occasionally treated by physicians for brain disease. I have been speaking of hypermetropia, but the remark applies to other abnormalities of refraction.

Brudenell Carter has reported a remarkable case of myopia simulating brain disease in the eighth volume of the Clinical Society's transactions. This report should be carefully studied by physicians. The patient, for supposed brain troubles, took a voyage to Australia, but was no better for it. He was told that "he must abandon the idea of carrying on the family business, or of taking any active part in life." This patient was immediately, thoroughly, and permanently cured by the adoption of appropriate glasses. ..... I could relate cases of hypermetropia in which the diagnosis of brain disease had been made by physicians and refuted by ophthalmic surgeons. Here is one. A medical student, 21 years of age, had been obliged to give up his work because reading brought on attacks of vomiting and frontal headache. The vision of each eye for near and distant objects seemed good to ordinary examination, and there were no ophthalmoscopical changes, except some dilatation of retinal veins. To cut a long story short, after travelling about two years, doing nothing towards his career, Mr. Tweedy, in May last (1875), fitted him with a pair of spectacles, remedying hypermetropia and astigmatism. The patient has been well ever since, has returned to his medical career, and has graduated at the University of London.

Dr. Hughlings Jackson's remarks were made in reference to cases treated about 30 years ago, so that it is evident that the association of errors of refraction with headache and

other forms of cephalic and visceral reflexes and neuroses was not unknown in London at that time. Does Dr. Gould seriously contend that British ophthalmic surgeons have retrograded since then and that they have either abandoned or forgotten a phase of clinical medicine which they were among the first to elucidate and to make known? My experience is that English physicians and English ophthalmic surgeons are fully aware of the causal relationship of eye-strain to headache and other neuroses and of the importance of correcting, if necessary, even low errors of refraction.

May I, in conclusion, add that it has been my privilege to be personally acquainted with a large number of ophthalmic surgeons practising in all parts of the world, and I am convinced that nowhere is the importance of correcting errors of refraction as an essential part of the treatment of headaches and other nerve symptoms more intelligently appreciated than in England.

I am, Sirs, yours faithfully,

March 19th, 1904. F.R.C.S. ENG.

CHOLERA IN THE TURKISH EMPIRE.

(FROM THE BRITISH DELEGATE TO THE OTTOMAN BOARD OF HEALTH).

THE outbreak of cholera at Basra reported in my last letter (THE LANCET, March 12th, p. 758) still continues. The weekly returns of the disease there since Feb. 6th, the date of the first known case, have been as follows:—

February	6th	to	12th	...	6 cases	...	3 deaths.
,,	13th	,,	20th	...	7 ,,	...	7 ,,
,,	21st	,,	29th	...	30 ,,	...	25 ,,
March	1st	,,	5th	...	5 ,,	...	7 ,,
,,	6th	,,	12th	...	8 ,,	...	5 ,,

or a total of 56 cases and 47 deaths in five weeks. The true totals, could they be ascertained, would no doubt be considerably in excess of these figures.

From Basra the infection has already spread elsewhere. The suspected case at Korna, the village at the junction of the Tigris and Euphrates, was mentioned in my last letter. No fresh case has since been reported from there. On March 1st news was received from Bagdad that two Turkish ships, the *Mossoul* and *Ressafa*, which had undergone quarantine at Kermet-Ali and had then ascended the river nearly as far as Bagdad, had each had a case or cases of cholera on board. The local authorities repulsed both ships to Kermet-Ali (near Basra). These ships are said to have suffered not a little from lack of provisions and even of coal on their long return journey down the Tigris and Shatt-ul-Arab.

On Feb. 29th the Basra health office reported a rumour that on another steamer, the s.s. *Kola*, which had left Basra in quarantine for Bombay on Feb. 18th, two cases of cholera with one death had occurred among the passengers and one death among the crew during the voyage from Basra to Mascat. This report has not yet been confirmed. On the same date it was stated that a guard in the custom house who had left Basra on Feb. 26th had died on the 27th at Duassir, a village on the Shatt-ul-Arab some six hours below Basra, after a sharp attack of diarrhœa and vomiting.

No other instances of spread of the disease from Basra have been reported unless the fresh outbreak of cholera at Bagdad is to be ascribed to this cause. More probably this latter outbreak is due to a revival of that which occurred there at the end of December and the beginning of January. As stated in my last two letters the extent of the epidemic there was not known to the authorities with the remotest approximation to the truth. After Jan. 7th nothing more was heard of the disease in Bagdad and it was hoped that it had really died out, but on March 7th the health office reported two cases the clinical description of which was that of typical cholera. On the following day three other cases, all fatal, were reported. Since that date from three to six fresh cases have been observed daily. The following are the daily returns from Bagdad since the reappearance of the disease there:—

March	7th	...	...	2 cases	...	...	0 deaths.
,,	8th	...	...	0 ,,	...	...	3 ,,
,,	9th	...	...	3 ,,	...	...	3 ,,
,,	10th	...	...	4 ,,	...	...	4 ,,
,,	11th	...	...	4 ,,	...	...	1 ,,
,,	12th	...	...	3 ,,	...	...	3 ,,
,,	13th	...	...	3 ,,	...	...	1 ,,
,,	14th	...	...	6 ,,	...	...	3 ,,

or a total of 25 cases and 18 deaths in eight days. The origin of the infection in these cases could not, it was said, be determined. None of the persons attacked had had any communication with arrivals from Basra, Kerbela, or Musseyib, or from any other of the places where cholera has been known to be present in recent weeks. The health officer of Bagdad has expressed the opinion, by telegram, that the fresh cases are of local origin and due to an infection which had never really died out. He mentions cases which occurred and only came to his knowledge by accident and long after the death of the patient. Many others must have occurred and have been entirely hidden from the authorities. In the Jewish quarter, where most of the cases have been observed, the overcrowding (he adds) is so great that any attempt at even partial isolation is impossible.

The local authorities at Bagdad are reported to be showing much activity; the town has been divided into three sections, each of which is provided with a corps of disinfectors and medical officers. An attempt has been made (or at least ordered to be made) to lessen the overcrowding by removing some of the population from the infected quarters to tents outside the town. Lazarets have been established at Khan-beni-Said for the main road to Persia, at Mahmudié for the Kerbela and Hindieh road, and at Feloudja for the Aleppo road. At these lazarets five days' land quarantine has been imposed. A fourth lazaret has been opened at Garara just below Bagdad to control the river traffic. Troops have been ordered to patrol the country and to seize refugees and to send them to one or other of these lazarets.

The Constantinople Board of Health, which has the control only of maritime and river sanitary measures, has disapproved of the land quarantine imposed by the local authorities. It has further ordered the following measures: ships leaving Bagdad for the south will undergo a medical visit and chemical disinfection (in the absence of a disinfecting stove) at Garara where, as stated above, a lazaret has just been opened. On arriving at Basra these ships will be subject to a second medical visit and steam disinfection in the lazaret of Salahieh at Basra. Ships leaving Basra for Bagdad will undergo the same measures in the reverse order—that is to say, they will undergo medical visit and steam disinfection (i.e., of the clothes and effects of the crew and third-class passengers) at the Salahieh lazaret, and a second medical visit and, if necessary, chemical disinfection on arriving at Garara. The five days' quarantine which had been in force at the temporary lazaret of Kermet-Ali for ships ascending the river has been suppressed. It was recognised that Bagdad is as deeply infected with cholera as Basra, and that a five days' stay in an improvised lazaret without a stove or any proper means of disinfection would be no protection to Bagdad and would only do more harm than good. The entire uselessness of the Kermet-Ali lazaret was shown by the occurrence, mentioned above, of cases of cholera on the ships *Mossoul* and *Ressafa* after both of them had undergone five days' detention there. This lazaret has therefore been closed.

For the intermediate places on the river between Basra and Bagdad some special dispositions were necessary, as though there are no towns of any great importance the river steamers are in the habit of calling at a large number of places which are to some extent dependent on the river service for their supplies. It was therefore decided that the steamers should be allowed to call at those places where the local authorities had appointed a medical officer and provided means for chemical disinfection. This has now been done at Korna, Amara, Ali-gharbi, and Kut-el-Amara, and consequently ships may now touch at these four places.

From the Syria and Aleppo vilayets no cases of cholera have now been reported for several weeks. There have, however, been persistent, though unconfirmed, rumours that sporadic cases of the disease are still occurring in Aleppo.

The annual pilgrimage to the Hedjaz is now drawing to a close. The three days of the Kurban Bairam fêtes with which the ceremonial part of the Haj ends fell this year on Feb. 27th, 28th, and 29th. Fortunately the Haj has this year, as last year, passed off without any outbreak of cholera or other infectious disease.

Constantinople, March 16th.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

University Lectures.

THE course of lectures delivered by Sir Oliver Lodge to medical practitioners on physics applied to medicine has now been concluded. Originally announced as consisting of four lectures the course ultimately extended to six. There was a large attendance on each occasion, the average number present being about 300, many of whom came from a considerable distance. Each lecture was illustrated by a large number of striking experiments and a printed summary of the facts stated on each occasion was distributed to those present at the subsequent lecture. Sir Oliver Lodge, whilst mentioning many points in connexion with applications to medicine, was careful not to commit himself to any expression of opinion as to the therapeutic value of the agents which he described but gave his facts on the authority of the papers from which he quoted. Dealing with the subject of the action of rays upon a cancer he pointed out that the beneficial action to some extent depended on the oxidising power of air ionised or rendered active or ozonised by the rays, so that it was not to be expected that the same benefit would be felt in deep-seated cancers where the supply of free oxygen was non-existent. It was conceivable, however, that means might be found for introducing into the tissues some form of tractable oxygen or decomposing oxygen compound and then rendering it active by treatment with the more penetrating rays, being careful to protect the surface by means which he had already described. He went on to say: "It is not easy to suggest the best sort of injection to try for the purpose of coöperating with x rays in deep-seated cases; the oxygen is wanted in some available and unstable form. Arterialised blood is one substance which contains it in that form, especially under diminished pressure, when it can actually froth with oxygen; and why may I not venture to suggest that by injection of highly arterialised blood under certain conditions, or perhaps by the injection of actual gaseous oxygen with suitable precautions, simultaneously with the application of x or of radium rays, it may be possible to reach and gradually destroy even deep seated malignant growths, provided it is possible to localise the injected material and keep it from the surrounding healthy tissue where the building up or stimulating power of the rays should be at work?" In the final lecture, which dealt with the subject of high-frequency oscillating currents, Sir Oliver Lodge dwelt upon the singular circumstance that these currents could be passed through the body without their being felt, a phenomenon which he ascribed to their high frequency. A comparatively slow alternating current could be felt very strongly and those of a frequency comparable to the vibrations of sound were considered the most deadly. When, however, the pulsations numbered millions per second there was no sensation, since the tendency to rupture the molecules of the tissue by the current in one direction was immediately counteracted by the current in the opposite direction. Another explanation had been suggested—namely, that currents of a high frequency kept to the outside of the conductor, especially if it was a good one and did not oscillate. The oscillating disturbance, which could go harmlessly through a human being, was not only able to light an incandescent lamp but would, if applied for a sufficiently long time, pierce a hole through glass an inch thick if the latter were smeared with turpentine to prevent the current going round it. In showing this experiment attention was directed to the manner in which the luminous electricity tended to spread on the surface in a tree-like form and Sir Oliver Lodge mentioned this as explaining the tree markings which were sometimes found on persons struck by lightning and which were erroneously supposed to be photographs of adjacent trees. He believed that the effect of being struck by lightning or by Leyden-jar discharges was not necessarily such as to cause permanent death or destruction of the tissues. It might be found to be of the nature of a temporary paralysis and that by treatment such as artificial respiration in the case of persons apparently drowned, if continued long enough, the heart might of itself start acting again unless, of course, there was actual destructive damage from explosion. His assistants had instructions that if any of them were accidentally struck by Leyden-jar discharges they were to be treated as if they had been drowned and the treatment was not to be stopped for three or four hours. Professor H. G. Barling, in the absence of Professor B. C. A. Windle, dean of the medical faculty, owing to ill-health, expressed to Sir Oliver Lodge the profound and grateful thanks of the profession for the most interesting and useful addresses to which they had listened. Many of them must feel that they would like to give up medicine and to apply themselves to electrical research. In any case a new zest had been added to their work, a new interest had been created for them, and the subject of electro-therapeutics had been placed upon a much higher level than it had ever occupied before. Sir Oliver Lodge had rendered them a great service and in doing so he had also rendered a great service to the University. Sir Oliver Lodge, in reply, said that he had enjoyed giving the lectures and reminded his hearers that there was nothing in the whole range of science which might not turn out to be useful and applicable in the splendid opportunities which the medical profession enjoyed in the service of humanity. On March 16th the first Huxley lecture of the University was delivered in the town-hall before a large audience by Sir Michael Foster, the Vice-Chancellor presiding.

Hadwen v. *Price.*

At the winter assizes in Birmingham now taking place a case has been tried in which Dr. W. R. Hadwen of Gloucester, a well-known antivaccinationist, sued Mr. Arthur Edwin Price, a medical man until recently practising in the same city, for libel. On Sept. 26th last Dr. Hadwen was called in to see a boy named Roe, the son of an engine-driver employed by the Great Western Railway Company. He found that the boy was suffering from headache and his temperature was about 101° F. He thought that the boy was suffering from a chill and so ordered a hot bath and saline mixture. There was nothing visible on the child's body except pimples on the abdomen. In the early hours of the next morning Dr. Hadwen was sent for again and found that death had occurred at about 4.30 A.M. He refused to grant a certificate without a post-mortem examination. At this he found no signs of injury or affection of the organs of the body except the brain which was suffused and presented some slight adhesions of the membranes. As a result he gave a certificate in which he said that the cause of death was, primarily, congestion of the brain and, secondarily, convulsions. On Oct. 11th the mother of the child developed a small-pox rash and on the same day the father was found to present a small-pox rash in the secondary stage of development. On the 23rd Mr. Price wrote to the chairman of the sanitary committee asking whether the origin of the outbreak was to be investigated. As a result Dr. J. Campbell, medical officer of health, called upon Mr. Price and wrote to him on the subject. Mr. Price, dissatisfied with the explanation, wrote a letter to the secretary of the Local Government Board, drawing attention to the case in terms which the plaintiff considered to be libellous. His counsel argued that the suggestion in the letter was malicious and that it was that the plaintiff, being opposed to the practice of vaccination and having found that an unvaccinated child had contracted small-pox, made no notification of it and gave an untrue certificate of death. The suggestion was that the plaintiff, to support his own antivaccination theory, suppressed all the facts and gave a false certificate of death. The plaintiff in his evidence stated that the defendant was in the habit of insulting him in the street but this was entirely denied by the latter. The defence was that the letter to the Local Government Board was actuated by an honest desire to have the facts of the case investigated. In the course of the case Mr. Justice Kennedy, by whom it was heard, said that he should tell the jury that even if the defendant was entirely mistaken in the facts contained in his letter the occasion was privileged as long as the mistakes were not such as would indicate a want of good faith. He was protected, however mistaken he might be. In his summing up the judge, after again alluding to the privileged character of the letter, stated that, in view of the somewhat violent lectures delivered by the plaintiff on antivaccination, he was of opinion that the plaintiff would have been a wiser man if he had called in an independent practitioner at the post-mortem examination. Apart from the terms of the letter there was evidence that the defendant had said hard things about the plaintiff. The evidence which the jury must consider showed that the defendant had said that he would make it hot for the plaintiff when he came back from India. That was evidence of an evil and angry mind which might take a malicious form, even on a privileged occasion. If the jury came to the conclusion that the occasion was privileged,

they must say whether the privilege was properly used or whether without proper and careful inquiry which ought to mark an honest use of such an occasion, and without the truthful statements such as ought to mark a letter written on such an occasion, the real basis of the letter was a spite against the plaintiff which entitled him to damages. The jury returned a verdict for the plaintiff and assessed the damages at a farthing. In face of this verdict, counsel for the defendant asked the judge to disallow the costs of the plaintiff. His lordship said that he would take time to consider the question and on the second day after the conclusion of the trial announced in court that he had carefully considered the question and that the only construction he could put upon the finding of the jury was that in their opinion the action should never have been brought. He therefore acceded to the application that there should be no costs.

March 22nd.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Hospital Isolation of Scarlet Fever.

IN the last number of the *Medical Guild Quarterly* there is an interesting paper by Mr. Wolstenholme on the hospital isolation of scarlet fever as regards its efficacy in diminishing the prevalence of the disease, illustrated by the cases occurring in Salford from 1883 to 1902. He has constructed charts founded on figures supplied by Mr. C. H Tattersall, medical officer of health of Salford, showing (1) the total number of scarlet fever cases that have occurred yearly in Salford during the 20 years of compulsory notification; (2) the total number removed to hospital; and (3) the yearly percentage of removals to attacks. Another set of charts shows the same data for each period of four years. Though not laying too much stress on one set of figures, he concludes that the study of these charts would scarcely justify the hospital isolation of scarlet fever. For example, in 1883 there were 805 cases, of which 25 per cent. were isolated in hospital. Next year there were 1135 cases. In 1893 there were 864 cases, 49 per cent. being isolated. Next year there were 1064 cases. In 1899 there were only 725 cases, 73 per cent. being isolated, yet the next year there were 1317 cases. The other charts show that while the increase in the percentage of removals had increased from 43 per cent. in the four years ending 1886 to 74 per cent. in the four years ending 1902, the number of cases had increased from 4139 in the former period to 4442 in the latter. Mr. Wolstenholme says that the so-called isolation is rather the aggregation of cases in different stages of the disease and of different types of virulence, not only in the same hospital but often in the same ward. He suggests the following as possible ways in which infectious hospitals may keep alive the disease which they were intended to destroy: overcrowding of the hospital, want of better arrangement of wards, and too large size of the wards, not permitting a proper arrangement of cases according to their stage and severity. Possibly infection is also spread by the perambulations of the fever van, by the constant stream of anxious inquirers crowding the public trams, and by communications through the post by the patients, but, above all, by the return home of cases still infective. *Apropos* of this question, Dr. S. Holgate Owen, in his recent report on the health of the Moss Side district, says that as the result of investigations he is strongly of opinion that the quarantine of 14 days under which school children are placed after the removal of a scarlet fever patient from their home is not long enough to guarantee their freedom from infection and that they should not be allowed to return to school under at least a month. Mr. Wolstenholme mentions with appreciation the work of Dr. C. Killick Millard of Leicester and thinks that if the inquiry comes about, for which a good case has been made out in the interests of the patients, the public, and the ratepayers, it will be very largely due to Dr. Millard.

A Case of Suicide.

A somewhat unusual case of suicide occurred in Hulme on March 8th. A girl, aged 18 years, suffered intensely from neuralgia and on the day mentioned was in such pain that she drank a quantity of ammonia which she used for cleaning her dresses. She was taken to the infirmary in an unconscious state and died there on March 13th.

Country Schools for Town Children.

A scheme has been started in Manchester which, if successful and followed up elsewhere, will be helpful to town children. A committee has been formed, with Mr. Herbert Philips as chairman, to build, subject to the approval of the education committee and the Board of Education, a country school at Warford, near Mobberley, Cheshire, to accommodate about 80 children with their teachers, where children from the congested districts of the city can be sent in relays for about three weeks at a time during the summer. Through the generosity of Mr. Philips about five acres of land have been secured for the buildings, garden, and playground. As an experiment it is proposed to put up a corrugated iron building in the simplest style. The chief idea is that the children and, it may also be said, their teachers may benefit from the change into pure air and country surroundings and also that they may learn something of country life and of nature. It is a pity that the period proposed for the sojourn is so short, but financial and other difficulties, as, of course, the restriction of the numbers that could go, stand in the way of a longer stay. The ignorance of the common things of the country on the part of town-bred children, not by any means confined to those of the slums, is almost incredible. It may be hoped that some of these little town-dwellers may learn so to love the country as to lead in time to a small exodus back to the land. This experiment is on a small scale but it may lead to greater things.

Tinned Salmon.

The eating of tinned salmon is a somewhat dangerous proceeding and it seems strange that more care is not taken to see that the salmon is wholesome. One death has just taken place at Stalybridge and five other people were ill after a meal at which tinned salmon was eaten, and the verdict at the inquest held on March 19th was that the man had died from ptomaine poisoning. Mr. Adam Fox said that he had examined three tins of salmon and two of them were bad.

The Coronership at Bolton.

The Bolton coronership is now vacant and on March 19th the town clerk informed the council that there were nine applicants for the office. Of late law has been preferred to physic in making these appointments. Among the nine are Dr. E. M. Garstang and Dr. A. H. Taylor of Bolton; the remaining seven are presumably lawyers. One gentleman is an alderman of Bolton but in view of this contest he tendered his resignation which has been accepted. In addition to his medical qualifications, Dr. Taylor is a barrister at-law of the Middle Temple.

Ambulance Work at Northwich.

It is one of the good signs of the times that the interest taken in ambulance work does not show any tendency to decline. On Saturday, March 19th, the first inter-works competition in connexion with Messrs. Brunner, Mond, and Co.'s works took place at Winnington, Northwich, in the recreation grounds of the firm. Ten teams from the various works competed and were tested in stretcher work and individual injuries and the competitors had also to undergo a *viva voce* examination. A silver challenge shield, to be held for 12 months by the winning team, has been presented by the directors. The judge was Dr. G. H. Darwin of West Didsbury who has long taken great interest in ambulance work.

March 22nd.

WALES AND WESTERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENTS.)

Administration of the Midwives Act in Cardiff.

AS already reported in THE LANCET of Jan. 30th, p. 338, it was decided at the last meeting of the Cardiff division of the British Medical Association to approach the Cardiff corporation in order to lay before it some difficulties attending the administration of the Midwives Act. In certain circumstances a midwife is obliged to send for a qualified medical practitioner but there is no obligation placed upon a practitioner to obey the summons of a midwife and no provision is made for paying him. A deputation from the division has discussed this question with the local supervising authority, the health committee of the Cardiff

corporation, and has suggested that in the case of a patient being too poor to pay a fee the practitioner attending should be paid by the authority. The chairman of the committee expressed the opinion that in such circumstances the parish medical officer should be sent for and it was intimated to the deputation that the corporation had no power to pay a fee, however willing it might be to do so.

Medical Inspection of Schools in Bristol.

At the last meeting of the health committee of the Bristol corporation a suggestion was made by a member of the late school board that women health visitors should be appointed to visit the houses of working people and to aid by their advice in improving sanitary conditions. The chairman of the committee (Mr. Colston Wintle, L.R.C.P. Lond., M.R.C.S. Eng.), spoke in terms of approval of the suggestion but the medical officer of health (Dr. D. S. Davies) considered the proposal only a small part of the very important question of the medical supervision of schools. He thought that domestic teaching should be undertaken by the education committee and not by the health committee which might, however, with advantage control the general medical supervision of the schools. Eventually a subcommittee was appointed to confer with the education committee on the subject. In his report for 1902 Dr. Davies dealt at some length with the question of medical inspection in public elementary schools and detailed the action already taken in this direction in some English towns, notably in Bradford and in Birmingham, and he also gave an account of the methods of medical school inspection adopted in America and in Germany, from which it appears that in New York there are 205 medical inspectors of schools, in Chicago 56, and in Boston 50. Each inspector has four or five schools and about 2000 children under his charge and he visits each school daily, examining any child who appears to be ill or in any way needing inspection. In the German towns where medical school inspection is in force the inspector as a rule only visits each school about once a month, and in addition to inspecting the children he also examines the methods employed for lighting, warming, and cleansing the class rooms and the system of ventilation. Dr. Davies very properly emphasises the desirability of securing at all times such systematic inspection of schools as shall lead to the discovery of the earliest symptoms of illness or of unsuspected mild cases of infectious disease so as to prevent outbreaks rather than to suppress them and thus to fulfil the proper function of preventive medicine.

Cheltenham General Hospital.

The annual meeting of the subscribers to this institution was held on March 16th. The report stated that during the year 771 in-patients had been admitted against 906 in 1902. The out-patients numbered 4493 and the patients treated at the branch dispensary were 3939, being a slight decrease in numbers compared with the previous year. The financial statement was satisfactory and showed an increase in subscriptions and donations, but church collections and the Hospital Saturday Fund had fallen off. Colonel Croker-King was re elected president.

The late Curator of Dorset County Museum.

Mr. H. J. Moule, curator of Dorset County Museum and one of the best known antiquarians in the West of England, died at Dorchester on March 13th. He was born at Gillingham in 1825, being the son of the late Rev. H. Moule, vicar of Fordington, and among his brothers are the Bishop of Durham, Bishop Moule of Mid-China, and Archdeacon Moule. He was for some years librarian to the late Lord Wriothesley Russell and the late Earl Fitzwilliam respectively and in 1881 was appointed curator of the newly erected museum at Dorchester. There he did excellent work and was well known as an authority on all matters of antiquarian and historical interest. He was a prolific writer, one of his books being "Old Dorset."

March 22nd.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The New Provost of Trinity College.

AFTER an unusually long delay the announcement appeared on March 22nd that the vacant Provostship of Trinity College had been filled by the appointment of Dr. Anthony Traill. Dr. Traill, although he took the degree of M.D. in 1870, has never had any connexion with the teaching or practice of medicine. He is not—like his recent predecessors—a clergyman but he has for a long period taken a strong and active interest in the public affairs of the Church of Ireland. He has considerable property in Antrim and is a justice of the peace for that county.

Stewart Institution for Imbecile Children.

The annual meeting of the council of the Stewart Institution for Imbecile Children took place at the offices, 40, Molesworth-street, Dublin, on March 18th, Dr. Walter G. Smith occupying the chair. In moving the adoption of the report Dr. Smith delivered an interesting address in which he illustrated the progress from a small beginning of the only institution in Ireland for the treatment of the imbecile poor.

The Carmichael Prize Essay.

The Royal College of Surgeons in Ireland announces that the prize for the Carmichael essay, value £120, will be adjudged on the first Thursday in November, 1904. The contents of this essay, as is well known, are settled by the terms of Mr. Carmichael's will, which enjoins as its subject the state of the medical profession in Great Britain and Ireland and of the various hospitals and schools and the modes of examination adopted by the licensing bodies. Essays, which must not exceed 65,000 words in length, should be lodged at the College on or before July 1st, 1904, distinguished only by a device or motto.

Dublin Sanitary Association.

The annual meeting of the Dublin Sanitary Association was held on March 21st in the hall of the Royal Dublin Society, Mr. George R. Price, K.C., the President, occupying the chair. The draft report of the council, which was read, directed attention to the inadequate fines that had been inflicted for concealment of cases of small-pox during the recent epidemic, to the dangers in connexion with the present situation of the isolation hospital at the Pigeon House, to the disgracefully high infantile mortality, and to other matters. It recommended that part of the equivalent grant for education, amounting to £185 000, might with advantage be allocated to the improvement of the sanitary condition of the national schools throughout Ireland, particularly in the direction of providing sanitary accommodation for the pupils. The President of the Royal College of Physicians of Ireland, in proposing the adoption of the report, said that he was in unison with those who would punish people who attempted to conceal small-pox but they should follow the English system and if they locked a man up in an isolation hospital they should take care to see that his family did not suffer. He agreed with all that the report stated as regards the insanitary condition of the national schools.

Queen's College, Belfast.

The action of the Government, conveyed through Mr. Wyndham, that it could not see its way to accede to the representation seeking State assistance for Queen's College, Belfast, is unfavourably commented on in Belfast.

March 22nd.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Hospital Isolation for Cases of Contagious Disease.

AT a recent meeting of the Hospitals Medical Society M. Debove in his own name as a member of the Conseil de Surveillance of the Assistance Publique and also in the name of M. Faisans, a delegate from the society to this council, asked the opinion of his colleagues on the question of the isolation of cases of contagious disease in hospitals. M. Debove had recently visited the hospital at Aubervilliers where he found every necessity for modifying the existing state of matters. It is needful to isolate two contagious diseases—namely, small-pox and scarlet fever. Cases of these two diseases should therefore continue to be isolated in the new hospital which was rising on the site of the old wards at Aubervilliers. The other so-called infectious diseases would be treated in the general hospitals, being nursed by a special staff under the direction of the physician in charge. M. Debove added that the society ought to deliver an opinion on the matter so that the Assistance Publique could make up its mind at once what to do. An interesting discussion followed, in the course of

which M. Belin asked that special wards should be reserved for doubtful cases. M. Debove answered that he had foreseen this point and also considered that diphtheria should be considered as infectious in the same category as scarlet fever. Finally, the society passed a resolution that cases of small-pox only should be treated in a special isolation hospital and that cases of all other infectious diseases should be treated in isolation wards in general hospitals with a special staff to look after them.

The Water-supply of Paris.

At the meeting of the Municipal Council which was held on March 9th M. Caplain put a question to the Prefect of the Seine as to the quality of the water-supply. A certain number of cases of typhoid fever has recently been reported and M. Caplain wanted to know whether this outbreak had not been brought about by the water authorities having substituted river water for spring water in the public supply. This is done by no means uncommonly, to the great detriment of the population of Paris. The Prefect of the Seine said that the authorities were always thinking how to improve the sanitary state of Paris and it was a fact that in 1882 the deaths from typhoid fever were 142 per 100,000 inhabitants, while to-day the proportion was only 10 per 100 000. The present increase in the number of cases of typhoid fever was much exaggerated and nothing like an epidemic existed. He allowed that on Feb. 10th the authorities had been obliged to turn river water into the public supply but the water had been filtered and so had been rendered harmless. M. Poirier de Narçay reminded the meeting that the Municipal Council had already passed a by-law to the effect that the authorities should never substitute river water for spring water without posting a notice of such substitution. As in the present case this regulation had been violated M. Poirier de Narçay proposed that a vote of censure should be passed on those responsible for the error. This was accordingly done.

The Prophylaxis of Malaria.

In reference to a recently issued report of M. Kermongant on infectious diseases in the colonies M. Laveran gave notice of the following motion at the meeting of the Academy of Medicine held on March 8th :—

The Academy of Medicine, in view of the excellent results obtained in diverse countries by the mechanical protection of houses against mosquitoes, hereby resolves that the military authorities should adopt similar precautions, more especially in the French colony of Madagascar, where mosquitoes which spread malaria abound.

The Dangers of Radio-therapeutic Applications.

At the meeting of the Society of Dermatology and Syphilography held on March 3rd M. Oudin read a paper in which he maintained that in the treatment of large cancerous masses by radio therapeutics the sittings must not follow each other at short intervals, and also that each individual sitting must be short, so that the organism will have plenty of time to eliminate the reabsorbed products. As a matter of fact, after one or two sittings it is quite common to see signs of a toxæmia, for parallel with a notable diminution in the size of the tumour the patients suffer from a raised temperature, loss of appetite, cramps, a drawn expression of the face, scanty and albuminous urine, cough, and vomiting. If the sittings are then stopped these symptoms pass off after a few days' rest, but if the sittings are continued or if the early ones have been too long there is a rapid dissemination of the growth which quickly carries off the patient. In support of his opinion M. Oudin related three cases in which an acute cachexia set in during a course of radio-therapeutics. The patients were suffering from cancer but their general health had been excellent at the commencement of the treatment. It is a question whether the disagreeable symptoms are due to reabsorption of toxins or to the introduction into the general circulation of cancer cells the vitality and virulence of which have not been sufficiently attenuated by the rays to render them harmless. M. Oudin rather inclines to the latter theory.

March 22nd.

EGYPT.

(FROM OUR OWN CORRESPONDENT.)

The Tourist Season.

EGYPT is enjoying a greater influx of visitors than usual, partly because some of them are yearning for sunshine after the rainy season in Europe and America and partly because many hesitated to come here last winter on account of the existence of cholera in the summer of 1902. As usual the chief numbers come from America, England, and Germany. The hotels filled at an earlier date than is generally the case and they are still very full, having occasionally to requisition tents, corridors, and bath-rooms for a few nights. The weather fortunately has been exceptionally pleasant, December being warmer and March being decidedly cooler than the average, while the general health has been so good that both physicians and nurses have been but very little employed. A few sporadic cases of influenza have been imported from Europe but have not spread, and typhoid fever is so scarce that only two cases have occurred, both of these being among the English residents. One child brought whooping cough from Italy and by means of a children's party succeeded in infecting many of the English colony, but the disease yielded rapidly to a free exposure to sunshine.

The Anglo-American Hospital.

This hospital was duly opened in January by the Countess of Cromer and half of its 26 beds are already occupied. It is well situated at Ghezireh near the racecourse and is surrounded by the purest of air and fields in which buffaloes graze on the clover or strawberries are grown for the fruit market. The hospital is administered by a house committee of English and Americans, including a preponderance of medical men, and the nursing staff includes a matron and trained English nurses. Special and private wards are supplied for men, women, and children of all nationalities, but preference is given to British subjects and citizens of the United States. Infectious and mental cases are not admitted. In addition to the paying patients there are four general wards for those without means and for the women and children of the army of occupation, including such midwifery cases as used to be sent to the female hospital at the Citadel which has now been closed. The patients in the general wards are attended by an honorary medical staff of seven practitioners who have volunteered to take this duty in turn. Any medical practitioner, being a British or American subject and practising either permanently or temporarily in Egypt, may treat paying patients in the hospital and any foreign medical man may be called in as a consultant. The various rooms have been made to look as home like as possible, a well-lighted up-to-date operating theatre has been provided, fireplaces are placed in all the chief rooms, the electric light has been laid on, and a plentiful supply of pure drinking water has been obtained by sinking a well. Sir E. Cassel, who originally started the subscription list with £5000, has now promised to give an equivalent sum to anything subscribed by others, so that every donor of one guinea to the fund is practically obtaining two guineas for the hospital, which will be of great value to the whole Anglo-Saxon community.

Sanatorium Al Hayat, Helouan.

Under the above heading advertisements can be found in the leading English medical papers, though this new establishment is more likely to be popular with Germans, Russians, and Swiss than with the British or Americans. The Arabic word "Haya" signifies cure and the sanatorium is admirably placed for obtaining fresh air in the Helouan desert with nothing between it and Suez some 80 miles away. It has been financed by Baron Knoop and his friends and is managed by two German medical men and so far only two nurses. The building, begun in February, 1903, was opened in December last with 80 beds all facing south in order to obtain as much winter sun as possible. It consists of five storeys, the uppermost three being bedrooms, while the dining, billiard, and smoking rooms and library are purposely placed at a distance to keep the bedrooms quiet; they are, however, connected by covered corridors. Great care has been taken to construct the building as a modern hospital, with rounded corners to the rooms, mosaic cement flooring, an absence of unnecessary cornices, and large plate-glass windows. All are admitted, sick and healthy, and there is no power of enforcing any rules or regulations, so that the establishment is something between a hotel and a sanatorium, like many a hydropathic establishment in England. It is intended, however, to set apart the top floor for tuberculous patients and to disinfect all the rooms with formalin. The medical men hope to attract cases of nephritis, gout, rheumatoid arthritis, and tropical complaints on their way home to Europe. A small infectious hospital for six beds and a disinfecting stove are now being built, the hospitality of which will be

offered to the town of Helouan which has at present no building for receiving infectious patients. German medical men practising in Cairo and Helouan are specially excluded from treating their patients in the sanatorium except in consultation with the resident physicians, but in special circumstances non-German patients may be treated by medical men of their own nationality. This is to prevent any linguistic difficulties but it is only fair to say that one of the resident medical officers speaks English extremely well.

Cairo, March 16th.

CANADA.

(FROM OUR OWN CORRESPONDENT.)

Montreal Medico-Chirurgical Society.

Dr. Harvey Cushing of Baltimore, Maryland, U.S.A., read a paper before the Montreal Medico Chirurgical Society at its regular meeting of Feb. 5th, the subject being on the removal of the Gasserian ganglion for tic douloureux. By the direct or sphenoidal zygomatic route Dr. Cushing has operated on 25 cases with but one death and he stated that he knew of 50 more cases with a general mortality of 5 per cent. The average age of his patients was 60 years and seven were over 70 years. 15 out of 20 cases were men and the right side was affected in four out of five cases. Drainage was used in only six cases. In every case the ganglion was examined by neurological experts but not in one could any pathological lesions be detected.

Montreal General Hospital.

3066 patients passed through the wards of the Montreal General Hospital during 1903 and the outdoor patients numbered almost 36,000. The excess of expenditure over ordinary income amounted to nearly $14,000, which was about $4000 more than last year. On Dec. 31st, 1902, the endowment fund amounted to $43,500, to which have since been added during the year $7,000. Dr. D. A. Shirres was elected neurologist to the hospital.

Annual Meeting of the Ontario Board of Health.

At the annual meeting of the Ontario Board of Health held in Toronto during February the secretary presented the annual report. It showed that during the year 1903 there was a marked decrease in small-pox and scarlet fever. Diphtheria, however had prevailed extensively but was by no means of such deadly effect as formerly because of the intelligent use of antitoxin. The greatest prevalence of this disease was in the last quarter of the year, when the death-rate was 13·47 per cent. of the cases, which is slightly in excess of the yearly rate. The deaths from tuberculosis during the year amounted to 2072. The death-rate in the province for 1903 was given as 12·6 per 1000. March was the most fatal month, when the death-rate rose to 14·7. The splendid work of the retiring secretary, Dr. Peter H. Bryce, was marked by the presentation to him of a grandfather's clock.

Conference on School Hygiene.

During the month of February there was held in Toronto a conference of educationists and medical men on the subject of school hygiene, called together at the instance of the Hon. Minister of Education. Dr. Charles Sheard, medical health officer, Toronto, read a paper on How to Prevent Outbreaks of Infectious Diseases among School Children and to Suppress them when Present. Dr. Bryce dealt with the Great Relative Prevalence of Preventable Diseases in Children of School Age as revealed by the Ontario Statistics. He called attention to the fact that the death-rate from these infectious diseases had been reduced in Ontario by one-third. Dr. Charles A. Hodgetts discussed the question of Compulsory Drill for School Boys.

A Trial of Marmorek's Antituberculous Serum in Montreal.

Two or three weeks ago Dr. Lemieux returned to Montreal from Paris, bringing with him a sufficient quantity of Marmorek's antituberculous serum for 15 injections. Under his direction it was given a trial at the Nôtre Dame Hospital, two cases being experimented upon, one case being surgical tuberculosis of the knee-joint and the other tuberculosis of the lungs. In the former neither good nor bad effects were noticed. In the case of tuberculosis of the lungs the results are reported as follows. In all this patient received nine injections; the temperature remained the same but the pulse-rate increased; the sputa were weighed every day during the period of injections and daily showed an increase up to two ounces on the ninth day, on which day the injections were stopped at the request of the patient himself. When the injections were first commenced the patient weighed 118 pounds; after the ninth injection a loss of three pounds was recorded. The cough also increased and was more troublesome. In this hospital during the month of January there were treated in the outdoor departments 1262 patients and 171 patients in the wards.

Typhoid Fever Epidemic.

Montreal has recently passed through an epidemic of typhoid fever, there having been in its suburbs a number approaching 1000 cases and the hospitals have all been called into requisition to care for those afflicted with the disease. Of course, the drinking water of the suburbs in question came in for criticism and the provincial board of health ordered an analysis with the result that the water was found to be contaminated with sewage but no typhoid bacilli were found. The *Montreal Medical Journal* publishes a statement from the civic engineer which is remarkable. This gentleman, who has been investigating the cause of the epidemic, states that there was formed a wall of ice 67 feet high, so strong as completely to divert the current of the St. Lawrence river, so that the main stream made its way over and through locks and canals, and then crossing the bed of the Ottawa river the current struck the head of the island of Montreal, so that for the first time in the memory of the oldest inhabitant of the metropolis of Canada the waters of the St. Lawrence river passed, not merely along the southern shore of the island but also flowed down the back river, so that while Montreal was enjoying the purest draughts from the St. Lawrence its suburbs were partaking of the filth and the slime of sewage contamination.

Raising the Standard of Medical Matriculation.

The standard of entrance into the medical profession is being steadily raised in Canada. Lately Queen's University at Kingston, Ontario, has decided to make the matriculation the same as in Arts, with the exception of modern languages. 10 per cent. of Queen's students are usually Arts graduates and 75 per cent. more generally pass the Arts matriculation before beginning the study of medicine. It is only the other 15 per cent. who would find the new regulations more stringent and it will do them no harm to comply with them.

Addition to the McGill University Medical Faculty.

The Dental Association of the province of Quebec has decided to cast in its lot with McGill University and with Laval University. This means that the present Dental College of the province of Quebec will be abolished, McGill University furnishing the dental course for English-speaking students and Laval University that for the French language. McGill University, however, declines to grant the degree of doctor of dental surgery upon graduation as is done by the present college. Instead it will grant a degree of master of dental surgery followed by one of doctor of dental surgery three years later upon the applicant writing an original technical essay. Laval University will grant the degree of doctor of dental surgery upon graduation. So far as the department is concerned in McGill University it will be under that of the medical faculty, of which Dr. Thomas G. Roddick, M.P., will be Dean.

March 14th.

Obituary.

THOMAS HUNTER HUGHES, M.R.C.S. ENG., L.S.A.,

CORONER FOR SOUTH CARNARVONSHIRE.

Mr. Thomas Hunter Hughes died on March 17th at his residence, "Penmaen," Pwllheli, Carnarvonshire. The deceased, who was 67 years of age, received his medical education at St. Bartholomew's Hospital and took the qualifications of M.R.C.S. Eng. and L.S.A. in 1858. Mr. Hughes had been for the past 24 years coroner for South Carnarvonshire. The coronership has now been in the family for over a hundred years, Mr. Hughes's father and grandfather—both members of the medical profession—having preceded him in the appointment. The deceased was highly esteemed by the members of the profession in North Wales and had filled the

office of president of the North Wales branch of the British Medical Association.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—Dr. Theodor Thierfelder, formerly Director of the Medical Clinic of the University of Rostock. He was at one time assistant to Professor Wunderlich in Leipsic.—Dr. Howard J. Seeley, professor of histology in Long Island College Hospital, Brooklyn.

Medical News.

SOCIETY OF APOTHECARIES OF LONDON.—At examinations held recently the following candidates passed in the subjects indicated:—

Surgery.—L. F. Cope (Sections I. and II.), St. George's Hospital; A. C. George (Section II.), Manchester; P. F. Howden and R. Reynalds (Sections I. and II.), Bristol; R. H. Rigby (Section II.), Leeds; F. J. Waldemeier, London Hospital; and T. R. Waltenberg (Section I.), Manchester.

Medicine.—R. H. Cooper (Section II.), Charing Cross Hospital; L. S. Dudgeon (Sections I. and II.), St. Thomas's Hospital; J. M. S. Duncan, London Hospital; J. A. Kilpatrick (Section I.), King's College Hospital; J. A. Renshaw (Section II.), Manchester; R. H. Rigby (Sections I. and II.), Leeds; and T. R. Waltenberg (Section I.) and J. W. Watson (Section II.), Manchester.

Forensic Medicine.—P. S. Cooke, Charing Cross Hospital; L. S. Dudgeon, St. Thomas's Hospital; J. M. S. Duncan, London Hospital; W. S. Gibson, Manchester and Middlesex Hospital; F. W. Higgs, St. George's Hospital; and M. C. Vivian, Royal Free Hospital.

Midwifery.—M. O. Dollie, University College Hospital; L. S. Dudgeon, St. Thomas's Hospital; C. D. E. Forbes, St. George's Hospital; E. C. Richards, University College Hospital; C. A. Sampson, Charing Cross Hospital; and F. A. K. Stuart, Cambridge and St. Mary's Hospital.

The diploma of the Society was granted to the following candidates entitling them to practise medicine, surgery, and midwifery: A. C. George, R. Reynalds, R. H. Rigby, and J. W. Watson.

UNIVERSITY OF OXFORD.—On March 17th the following degree was conferred in congregation:—

M.D.—Herbert S. French, Christ Church.

FOREIGN UNIVERSITY INTELLIGENCE.—*Breslau:* Dr. Arthur Keller has been recognised as *privat-docent* of Children's Diseases.—*Greifswald:* Dr. R. Halben has been recognised as *privat-docent* of Ophthalmology.—*Halle:* Professor Veit of Erlangen has been appointed to the chair of Midwifery and Gynæcology. Dr. Wernicke of Breslau has been appointed Professor of Psychiatry in succession to Dr. Ziehen who goes to Berlin. Dr. R. Freund has been recognised as *privat-docent* of Midwifery and Gynæcology and Dr. Egon Tomaszewski as *privat-docent* of Dermatology.—*Heidelberg:* Dr. H. Kaposi has been recognised as *privat-docent* of Surgery.—*Lemberg:* Dr. L. Popelski has been appointed to the chair of Pharmacology. Dr. Hermann has been recognised as *privat-docent* of Operative Medicine.—*Paris:* Dr. Reclus, *agrégé*, has been appointed to the chair of Operations and Surgical Appliances in succession to Dr. Berger.—*Rostock:* Dr. Gustav Ricker, *privat-docent* of Pathological Anatomy, has been appointed Extraordinary Professor.—*St. Petersburg (Military Medical Academy):* Dr. M. Pokroffski has been recognised as *privat-docent* of Pathological Anatomy and Histology. Dr. Kraffkoff has been promoted to the Ordinary Professorship of Pharmacology.—*Toulouse:* Dr. Maurel has been appointed Professor of Experimental Pathology and Dr. Guilhem Professor of Forensic Medicine. Dr. Cestan and Dr. Baylac have been appointed, after *concours*, *agrégés* of Medicine.—*Tübingen:* Dr. A. Schwenkenbecher has been recognised as *privat-docent* of Internal Medicine.—*Würzburg:* Dr. Honsell, *privat-docent* of Surgery, and Dr. Lüthje, *privat-docent* of Internal Medicine, have been promoted to Extraordinary Professorships.

SOME NOVEL PATENTS.—Two American inventors have jointly patented what is described in the statement of claim as "a partition for beds of substantially uniform width throughout the greater portion of its length and having one relatively narrow end portion overhanging a space within which the bedclothing may be adjusted." The illustration shows a bedstead having apparently one mattress wide enough for two persons and above the mattress a railing of no great height which divides it lengthwise into two halves. Another inventor has patented a method of, and apparatus for, impregnating parts of the body with medicaments. The method "consists in covering the part to be treated with the medicament in liquid form and forcing the medicament into the pores of the skin by means of air under pressure acting on said medicament." Specifications and drawings of both these contrivances will be found in the *Official Gazette* of the United States Patent Office issued on March 8th.

DONATIONS AND BEQUESTS.—Mr. Joseph Barber has by his will bequeathed £100 to the Cancer Hospital, Brompton, and £50 each to the East London Hospital for Children, the Blackwell Hospital, the Hospital for Consumption, Brompton, and the Hospital for Incurables, Putney.—By the will of Mrs. Jane Anna Golding-Bird £10,000 are bequeathed in trust to pay the income thereof to her husband during his life and after his death in trust for Guy's Hospital subject to certain conditions.

A HOME OF RECOVERY FOR HOSPITAL PATIENTS.—Lord Lytton, in issuing an appeal on behalf of a committee which, under the patronage of Her Royal Highness Princess Louise, is trying to raise a sum of £35,000 to build and to endow a home of recovery, points out that—

> In spite of ever-increasing accommodation the number of applicants for admission to the London hospitals is still greater than can be provided for, with the result that patients are necessarily sent away to make room for fresh cases as soon as they can be removed with safety. Many of these are still too ill to be received into the ordinary convalescent homes, where little medical attendance is provided and to reach which the patients must be well enough to undertake the necessary train journey. They return, therefore, to their own homes, where the chances of a speedy and complete recovery are small indeed.

It is proposed to erect a home with 21 beds in a healthy part of Surrey to which surgical convalescents can be moved directly from the hospitals by means of a motor-ambulance. Mr. R. B. Martin, M.P., is the treasurer and will gladly receive subscriptions at 68, Lombard-street, London, E.C.

ABERDEEN DISPENSARY.—The annual report for the past year in connexion with the Aberdeen Dispensary, Maternity Hospital, and Vaccine Institution has just been issued. During the year the total number of cases treated in all departments was 12,127, showing an increase of 416 compared with the number treated in the previous year. The number of ordinary and zymotic cases amounted to 9434, being an increase of 241 on the previous year, the increase being accounted for principally by an epidemic of measles and whooping-cough, measles being the more prevalent, though in the previous year whooping-cough was very largely in excess of measles. The number of vaccinations and re-vaccinations performed was 117, a decrease of 23; and the number of dental operations was 588, an increase of 20. The special ear, throat, and nasal cases numbered 579, showing an increase of 27. In the special department for diseases of women 350 cases were treated, an increase of 42; and in the eye department 723 new cases were treated, an increase of 168. The number of patients treated at their own homes during the year by the general staff of the dispensary was 3102, an increase of 377; and the number of visits paid to patients was 9370, compared with 7632 in the previous year. The prescriptions dispensed numbered 48,220, showing a daily average (excepting Sundays) of more than 154, a daily increase of 14 over the previous year. The cost of medicines, exclusive of what was supplied to the Maternity Hospital, amounted to £418 4*s.* 5*d.*, an increase of £52 17*s.* 9*d.* The Aberdeen District Nursing Association continues to render most valuable services to the institution, the number of dispensary patients attended by the association being 135 and the number of visits paid to them by Queen's nurses was 2235. Valuable aid has also been received from the Poor's Association, no less than about 300 of the poor having been, on the recommendation of the medical officers of the dispensary, relieved by grants of provision from the association and otherwise. The funds of the institution have been benefited by the following, among other gifts: from the estate of the late Mr. James White of Legatesden, £89 17*s.* 6*d.*; from the estate of the late Mr. James Crichton, £50; from John Gordon's Charitable Fund, £25; from the Aberdeen Hospital Saturday Fund, £20; and from the Northern Cooperative Company, £20. The total receipts amounted to £1150 0*s.* 7*d.* and after meeting the expenditure as far as possible there was a total deficiency of £510 13*s.* 2*d.*, the expenditure of the General Dispensary exceeding the income for last year by £335 6*s.* 7*d.* Professor W. Stephenson continues to give his valuable aid and advice gratuitously and the committee of ladies who visit the hospital regularly afford most kindly help to the superintendent and aid in procuring gifts of

clothing and money, while Miss Scott as superintendent is always meeting with necessitous cases out of doors where timely assistance from the sick fund connected with the Poor's Association has been most helpful.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

General Board of Lunacy.

WHEN the House of Commons goes into committee on the Civil Service Estimates Sir John B. Tuke intends "to call attention to the inadequacy of the constitution of the General Board of Lunacy in England and Wales and to move a resolution."

Much Opposition.

As the Government has announced its intention of introducing, after Easter, its Bill to amend the Pharmacy Acts with respect to the sale of poisons and kindred subjects little attention need be paid to the measure on the same subject which was brought in some weeks ago by a group of private Members. It may be mentioned, however, that that Bill is now opposed formally by the following six members: Mr. Joseph Devlin, Mr. Harwood, Mr. Alex. Cross, Sir Mark Stewart, Mr. Alban Gibbs, and Sir Joseph Dimsdale.

The Vaccination Bill.

Both Sir John B. Tuke and Mr. Cohen have "blocked" the Vaccination Bill brought in by Mr. Broadhurst. The Bill has been introduced in previous sessions. Its object is to enact that no parent or person having the custody of a child shall be compelled or ordered to vaccinate the child "by any justice, court, or other person having authority hitherto to so compel or order." The proposal was originally the outcome of the vaccination difficulties in Leicester.

HOUSE OF COMMONS.

THURSDAY, MARCH 17TH.

Anthrax.

Mr. CHIPPS asked the representative of the President of the Board of Agriculture whether his attention had been directed to the circumstances attending a recent outbreak of anthrax at Levenshulme which resulted in the death of the owner of the affected animal and the serious illness of the butcher by whom it was dressed, and what steps, if any, had been, or could be, taken to prevent any such occurrence in the future.—Mr. AILWYN FELLOWES replied: The lamentable circumstances to which my honourable friend refers were brought under our notice and a special inquiry was at once instituted with respect to them. The serious results not only to animals but to human life which attend the slaughter in the ordinary way and the dressing of the carcasses of animals infected with anthrax are well known to us and we have distributed upwards of 360 000 copies of a leaflet calling attention to the danger. We have also addressed circular letters on the subject to the various local authorities. We propose now to issue a further special notice to stock-owners cautioning them against the dressing of the carcasses of animals which have died suddenly until the cause of death has been ascertained. This notice will be issued to local authorities for posting on walls and for direct distribution to farmers and others concerned.

Plague in India.

Mr. WEIR asked the Secretary of State for India whether in view of the fact that there were 5721 deaths from plague in Central India last January, as compared with 92 in January, 1903, he would state what steps were being taken to check the spread of the disease.—Mr. BRODRICK replied: All possible care is taken to prevent the spread of plague throughout India. Speaking generally, the State medical officers of the Native States forming the Central India Agency apply in the territories of their respective States the preventive and remedial measures which are employed in British India. These comprise (1) the provision of hospitals and medical aid for the sufferers; (2) disinfection of infected houses; (3) evacuation of infected quarters in towns and villages; (4) refuge camps for the uninfected; (5) inspection posts and observation huts at railway stations and on main routes; and (6) inoculation where desired. The Epidemic Diseases Act of 1897 is in force in the Indore Residency Bazaars and in the Cantonments of Mhow, Neemuch, and Nowgong, and sanitary rules made under it are enforced in those localities.

Mr. WEIR also asked the Secretary of State for India whether, in view of the outbreak of plague at Allahabad, arrangements would be made for the approaching University examinations to be held elsewhere.—Mr. BRODRICK replied: I have no doubt that the Government of the United Provinces will take all possible measures to secure the safety of the candidates appearing at the examinations of the Allahabad University.

Government Pharmacy Bill.

Mr. O'MALLEY asked the First Lord of the Treasury whether it was the intention of the Government to introduce this session a Bill to amend the Pharmacy Act, and if not whether the Government would afford facilities for the second reading of the Pharmacy Bill privately introduced this session.—Mr. BALFOUR replied: A Bill on this subject will be introduced in the House of Lords after Easter.

FRIDAY, MARCH 18TH.

The Sale of Poisons.

Sir THOMAS DEWAR asked the Secretary of State for the Home Department whether, having regard to the fact that attention had been called by the coroner for the City of London and other officers holding similar positions to deaths through misadventure arising from the sale of poisons in unlabeled vessels, he would consider the expediency of adding poisons such as phosphorus, cocaine, and chlorodyne to the Schedule of the Pharmacy Act, 1868, and arranging for the prohibition of the sale of corrosive mineral acids and ammonia unless in vessels bearing the word poison, and whether the sale of poisonous preparations to young children would be prohibited.—Mr. AKERS-DOUGLAS replied: It does not rest with me to take any such steps as are suggested, but I may refer my honourable friend to the answer given yesterday by the First Lord of the Treasury to the effect that a Bill to amend the Pharmacy Acts will be introduced in another place after Easter.

MONDAY, MARCH 21ST.

Plague at Johannesburg.

Mr. MACNEILL asked the Colonial Secretary whether it was true that the plague had broken out at Johannesburg and that in a few hours there had been 30 deaths and whether if that were so the Government would not put into operation the Chinese Labour Ordinance until the plague had been stamped out.—Mr. LYTTELTON replied: I received a telegram from Lord Milner just before I came into the House which shows that the honourable gentleman's information is correct. The fact that cases of plague have occurred will not be lost sight of by Lord Milner in dealing with the question of putting the ordinance into operation.—Mr. MACNEILL: Is the right honourable gentleman aware that Asiatics are peculiarly subject to the plague?—Mr. LYTTELTON: Professor Simpson, who has had great experience of the plague, has kindly offered his services and will at once proceed to the Transvaal to take any steps that may be necessary.

Death Certification.

Sir THOMAS DEWAR asked the Secretary of State for the Home Department whether the Government had yet considered the recommendations contained in the Death Certification Report of 1893; and if so whether he contemplated the introduction of legislation on the subject.—Mr. AKERS-DOUGLAS replied: The report to which my honourable friend refers has been considered by the Government with a view to legislation; but as my right honourable friend the President of the Local Government Board has stated on previous occasions it has not yet been found practicable to bring forward a Bill on the subject.

TUESDAY, MARCH 22ND.

Uncertified Deaths in Scotland.

Answering Mr. WEIR Mr. GRAHAM MURRAY said: The number of uncertified deaths in Scotland during 1901 was 2392. I am not in a position to give a pledge as to legislation on this subject.

The Whisky Question.

Mr. GORDON asked the President of the Board of Trade whether the Government proposed to take action as regards the sale of whisky, now described as Scotch malt and Highland whisky, which was the product either of German spirit or of maize, rice and molasses.—Mr. GERALD BALFOUR replied: If a complaint that a breach of the Merchandise Marks Act has been committed in a specific case is submitted to me in accordance with the regulations made under Section 2 of the Merchandise Marks Act, 1891, I will give it my careful consideration.

BOOKS, ETC., RECEIVED.

APPLETON, D., AND CO., New York and London.

A Text-book of Gynecology. Edited by Charles A. L. Reed, A.M., M.D., Professor of Clinical Gynecology in the Medical Department of the University of Cincinnati (Medical College of Ohio). Second edition, revised. Price 21s. net.

APPLETON, SIDNEY, London (D. APPLETON AND CO., New York).

Diseases of the Eye. By L. Webster Fox, A.M., M.D., Professor of Ophthalmology in the Medico-Chirurgical College of Philadelphia, Pa. Price 18s. net.

BAILLIÈRE, TINDALL, AND COX, 8, Henrietta-street, Covent-garden, W.C.

Insanity in Every-day Practice. By E. G. Younger, M.D. Brux., M.R.C.P. Lond., D.P.H., &c., Senior Physician, Finsbury Dispensary, late Senior Assistant Medical Officer London County Asylum, Hanwell. Price 2s. 6d. net. (Medical Monograph Series, No. 8.)

A Practical Guide to the Administration of the "Nauheim" Treatment of Chronic Diseases of the Heart in England. By Leslie Thorne Thorne, M.D., B.S. Durh., M.R.C.S. Eng., L.R.C.P. Lond., Medical Examiner to the London County Council Technical Education Board. Price 2s. 6d. net.

CHURCHILL, J. AND A., Great Marlborough-street, W.

Guy's Hospital Reports. Edited by J. H. Bryant, M.D., and F. J. Steward, M.S. Vol. LVIII., being Vol. XLIII. of the Third Series. Price, to subscribers, 6s.; to non-subscribers, 10s. 6d.

CLAY, C. J., AND SONS, Ave Maria-lane, E.C. LEWIS, H. K., 136, Gower-street, W.C.

Blood Immunity and Blood Relationship. A Demonstration of Certain Blood Relationships amongst Animals by Means of the Precipitin Test for Blood. By George H. F. Nuttall, M.A., M.D., Ph.D., University Lecturer in Bacteriology and Preventive Medicine Cambridge. Including Original Researches by G. S. Graham-Smith, M.A., M.B., D.P.H. Camb., and T. S. P. Strangeways, M.A., M.R.C.S. Price 15s. net.

IMPRIMERIE OSMANIÉ, Constantinople.

Annales Médicales et Bulletin de Statistique de l'Hôpital des Enfants Hamidié. Publié le jour Anniversaire de l'Avènement au Trône de S.M.I. le Sultan, sous la Direction du Médecin en Chef en collaboration avec les Médecins de l'Hôpital. Quatrième Année. (Two versions, French and Turkish, in one volume.) Price not stated.

LANE, JOHN, The Bodley Head, Vigo-street, W.

The Book of Herbs. By Lady Rosalind Northcote. Price 2s. 6d. net. (Vol. XII., Handbooks of Practical Gardening.)

The Still-room. By Mrs. Charles Roundell and Harry Roberts. Price 3s. net. (The Country Handbooks, Vol. IV.)

LIBRERIA É IMPRENTA GIL, Calle Banco del Herrador, Nos. 113-115, Lima.

Saneamiento de Lima. Proyectos del Dr. Ugo Biffi, Medico Higienista de la Municipalidad, y del Ingeniero Sr. C. L. Carty. Julio de 1903. Price not stated.

MARSHALL, MAJOR J. J. DE ZOUCHE, Shortwood, Teddington, Middlesex.

Stretcher Drill. Illustrated. Including the new Hand-seat, Wagon, and Railway Wagon Drills. Second edition. Compiled from the Manual of the Royal Army Medical Corps, 1904, Regulations for Army Medical Services, Field Service Manual A.M.S., King's Regulations, &c. By Major J. J. de Zouche Marshall, Hon. Assoc. Order of St. John of Jerusalem in England, Commanding East Surrey Vol. Inf. Brigade Bearer Compy., Ambulance Instructor, London Metropolitan Police. (Published by permission of His Majesty's Stationery Office.) Price not stated.

NISBET, JAMES, AND CO., LIMITED, 21, Berners-street, W.

The Life of Frederic William Farrar. Sometime Dean of Canterbury. By his son, Reginald Farrar. Price 6s. net.

OFFICE OF THE SUPERINTENDENT OF GOVERNMENT PRINTING, 8, Hastings-street, Calcutta.

Scientific Memoirs by Officers of the Medical and Sanitary Departments of the Government of India. Some Observations on the Poison of the Banded Krait (Bungarus Fasciatus). By Captain George Lamb, M.D. Glasg., I.M.S. New Series. No. 7. Price 8 Annas or 9d.

VIGOT FRÈRES, Place de l'Ecole de Médecine, 23, Paris.

Manuel de la Garde Malade. Soins Généraux à donner aux Malades. Par Eva Luckes, Directrice du London Hospital. Traduit sur la Troisième Edition Anglaise par Mme. J. H. Caruchet et Dr. Félix Regnault, Ancien Interne des Hôpitaux de Paris. Préface de Mlle. le Dr. Hamilton. Price Fr.3.50.

Du Rôle des Leucocytes dans l'Absorption et l'Elimination des Substances Étrangères à l'Organisme. Par le Dr. Jacques Carles, Médecin des Hôpitaux. (Ouvrage couronné par la Faculté de Médecine de Bordeaux.) Prix Godard de 2000 francs. Price Fr.6.

WRIGHT, JOHN, AND CO., Stone Bridge, Bristol. (SIMPKIN, MARSHALL, HAMILTON, KENT, AND CO., LIMITED, London.)

The Medical Annual: A Year-Book of Treatment and Practitioner's Index. 1904. Twenty-second year. Price 7s. 6d. net. Price of Stereoscope to view stereograms contained in the Medical Annual, 2s.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.

AGNEW, J. F., M.B., C.M. Glasg., has been appointed Health Officer of the City of Collingwood, Victoria, Australia.

BARWELL, HAROLD, M.B. Lond., F.R.C.S. Eng., has been appointed Honorary Surgeon for Diseases of the Throat and Ear to the Cripples' Home for Girls, Northumberland House, Marylebone.

BRISCOE, WILLIAM THOMAS, A.B., M.D., M.Ch. Dub., has been re-appointed Medical Officer for the Pewsham District by the Chippenham Board of Guardians.

BULLMORE, CHARLES CECIL, L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer to the Falmouth Lodge of Oddfellows.

CLEARY, M. R., L.R.C.S.I., L.K.Q.C.P.I., has been appointed Certifying Surgeon under the Factory Act for the Hospital District of the county of Limerick.

DEVINE, HENRY, M.R.C.S., L.R.C.P. Lond., has been appointed Clinical Assistant to the Chelsea Hospital for Women.

GOODMAN, T. H., M.R.C.S., L.S.A., has been appointed Certifying Surgeon under the Factory Act for the Haverhill District of the county of Suffolk.

SHIPMAN, G. A. C., M.A., M.B., B.C. Cantab., M.R.C.S., L.R.C.P., has been appointed Surgeon to the Grantham Hospital, Lincolnshire.

SHIPMAN, G. W., L.R.C.P., M.R.C.S., has been appointed an Honorary Consulting Medical Officer to the Grantham Hospital.

TELLING, W. H. MAXWELL, M.D., B.S. Lond., M.R.C.P., has been appointed Assistant Physician to the Hospital for Women and Children, Leeds.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BEDFORD COUNTY HOSPITAL.—House Surgeon. Salary £100 per annum, with apartments, board, and laundress. Also House Physician. Salary £80 per annum, with apartments, board, and laundress.

BRADFORD ROYAL INFIRMARY.—House Surgeon, unmarried. Salary £100 per annum, with board and residence.

BRIDGNORTH AND SOUTH SHROPSHIRE INFIRMARY.—House Surgeon. Salary £100, with board and lodging.

BRISTOL DISPENSARY.—Assistant Dispenser. Salary £80 per annum.

CHESTER COUNTY ASYLUM.—Third Assistant Medical Officer, unmarried. Salary £100 per annum, with board, lodging, and washing.

CHORLTON-UPON-MEDLOCK DISPENSARY, Manchester.—Resident House Surgeon, unmarried. Salary £120 per annum, with rooms and attendance.

DEVONSHIRE HOSPITAL, Buxton, Derbyshire.—House Surgeon, also Assistant House Surgeon. Salary of former £100 per annum, of latter £70 per annum, both with apartments, board, and laundry.

EASTERN DISPENSARY, Leman-street, Whitechapel, E.—Physician.

EAST SUFFOLK AND IPSWICH HOSPITAL.—Second House Surgeon, unmarried. Salary £80 per annum, with board, lodging, and washing.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark, S.E.—Assistant House Surgeon. Salary £70, with board, residence, and washing. Also Eight Clinical Assistants.

GRAVESEND HOSPITAL.—House Surgeon. Salary £100 per annum, with board and residence.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—Resident House Physicians for six months. Honorarium of £25.

HOSPITAL FOR EPILEPSY AND PARALYSIS AND OTHER DISEASES OF THE NERVOUS SYSTEM, Maida Vale.—Resident Medical Officer for six months. Salary at rate of £50 a year, with board and washing.

LINCOLN COUNTY HOSPITAL.—Junior House Surgeon for six months, eligible for re-election. Honorarium of £25, with board, residence, and washing.

LINCOLN GENERAL DISPENSARY.—Resident Medical Officer. Salary £170 per annum, advancing to £200, with apartments, fire, and gas.

LIVERPOOL EYE AND EAR INFIRMARY.—House Surgeon. Salary £80, with residence, maintenance, and laundry.

LIVERPOOL STANLEY HOSPITAL.—Senior House Surgeon. Salary £100 per annum, with board, residence, and washing. Also Assistant Hon. Physician.

LONDON COUNTY ASYLUM, Claybury, Woodford Bridge, Essex.—Junior Assistant Medical Officer. Salary £150 per annum, with board, apartments, and washing.

MANCHESTER NORTHERN HOSPITAL FOR WOMEN AND CHILDREN, Park-place, Cheetham Hill-road.—House Surgeon. Salary £80 per annum, with apartments and board.

NORFOLK AND NORWICH HOSPITAL.—Assistant House Surgeon for six months. Honorarium £20, with board, lodging, and washing.

POPLAR HOSPITAL FOR ACCIDENTS, Poplar, E.—Assistant House Surgeon for six months. Salary at rate of £80 per annum, with board and residence.

PORTSMOUTH, ROYAL HOSPITAL.—Assistant House Surgeon for six months. Salary at rate of £50 per annum, with board, residence, &c.

PRESTON ROYAL INFIRMARY.—Assistant House Surgeon. Salary £60 per annum, with board, washing, &c.

READING, ROYAL BERKSHIRE HOSPITAL.—Assistant Physician.

ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.—House Physician. Salary £100 per annum, with rooms, board, and washing.

ROYAL WATERLOO HOSPITAL FOR CHILDREN AND WOMEN, Waterloo-road, S.E.—Resident Medical Officer.

ST. MARYLEBONE GENERAL DISPENSARY, 77, Welbeck-street, Cavendish-square.—Honorary Physician.

ST. MARY'S HOSPITAL FOR SICK CHILDREN, Plaistow, E.—Assistant Resident Medical Officer, unmarried, for six months. Salary at rate of £20 per annum, with board, residence, and laundry.

ST. THOMAS'S HOSPITAL.—Aural Surgeon. Also Two Anæsthetists.

SEAMEN'S HOSPITAL SOCIETY (DREADNOUGHT), Greenwich, S.E.—Junior Resident Medical Officer. Salary £40 per annum, with board, residence, and washing.

TAUNTON, SOMERSET AND BATH ASYLUM, Cotford.—Assistant Medical Officer, unmarried. Salary £160 per annum, increasing to £200, with apartments, board, &c.

WEST LONDON HOSPITAL, Hammersmith-road, W.—Assistant Physician to the Nose, Throat, and Ear Departments.

THE Chief Inspector of Factories, Home Office, S.W., gives notice of a vacancy as Certifying Surgeon under the Factory Act at Brynmawr, in the county of Brecknock.

Births, Marriages, and Deaths.

BIRTHS.

DARKER.—On March 20th, at Croft-villas, Forest-hill, S.E., to George Fitz-James Darker, M.R.C.S., L.R.C.P., barrister-at-law, D.M.O., Southern Nigeria, and Mrs. Darker, a daughter.

EASTERBROOK.—On March 20th, at Albert-terrace, Edinburgh, the wife of Alex. M. Easterbrook, M.B., C.M., Gorebridge, Midlothian, of a daughter.

GIBBS SMITH.—On March 21st, at Crouch-street, Colchester, the wife of Edward G. Gibbs-Smith, L.R.C.P., D.P.H., of a daughter.

GILLETT.—On March 19th, at 26, Brookfield, West-hill, Highgate, London, to Richenda Gillett, M.D. Brux., and Joseph Rowntree Gillett, a son.

GREGORY.—On March 17th, at Englefield House, Highgate, N., the wife of H. L. Gregory, M.B., B.C., of a son.

DEATHS.

CAYLEY.—On March 19th, at Leavesden, Weybridge, Deputy Surgeon-General Henry Cayley, C.M.G., F.R.C.S., I.M.S., retired, Honorary Surgeon to the King, in his 70th year.

COLBORNE.—On Monday, the 14th instant, at Edith Lodge, Ramsgate, Mary Ann, widow of the late W. H. Colborne, M.D., F.R.C.S., of Chippenham, Wilts, aged 75 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

ANCIENT SUPERSTITIONS.

IT is really refreshing in this age of radium, motor cars, and Education Acts to see that old-world beliefs are not quite extinct. The following advertisement appeared in the *Standard* of March 15th.

FOR SALE.—Luck Caul of a new-born Child; an opportunity for mothers who have sons at sea; will be sold to highest bidder.—Address L. C. 601, Standard Office, St. Bride-st., E.C.

We have from time to time referred to this superstition which dates from far back in antiquity. The pagan midwives of the later Western Empire did a thriving trade in cauls but the early church councils denounced the practice. Lampridius says that the midwives sold the cauls to lawyers and we find in his account of the birth of Diadumenus, the son of Marcus Opellius Severus Macrinus who became Emperor in A.D. 217, the following passage:—"Solent deinde pueri pileo insigniri naturali quod obstetrices rapiunt et advocatis credulis vendunt, siquidem causidici hoc juvari dicuntur: at iste puer pileum non habuit sed diadema tenue sed ita forte ut rumpi non potuerit, venis intercedentibus specie nervi sagittarii." Despite Diadumenus having been born with the good omen of a diadem he met with a violent death, being murdered in company with his father by the soldiery in 218 when he was about ten years old. By the Middle Ages it was considered that the caul lost all its virtue if sold or even given to any one but one of the child's kindred. Cauls were occasionally handed down from father to son and an interesting instance is given by Mr. W. Jones in "Credulities Past and Present." Mr. Jones quotes the will of Sir John Offley, the date of which is May 20th, 1668. "Item, I will and devise one Jewell, done all in Gold and enamelled; wherein there is a caul that covered my face and shoulders when I came into the world, the use thereof to my loving daughter, the Lady Elizabeth Jenny, so long as she shall live, and after her decease the use likewise to her son Offley Jenny ..... and so from heir to heir ..... desiring that the same Jewell be not concealed nor sold by any of them."

THE POWER OF SUGGESTION IN "CHARMING AWAY" WARTS.

To the Editors of THE LANCET.

SIRS,—With reference to Dr. Archibald Hamilton's letter on this subject in THE LANCET of March 19th, p. 842, and his desire to know if any readers of THE LANCET have had similar experience, perhaps the following account of my personal experience may be of interest. When I was between the ages of 12 and 14 years I had 19 warts on my hands, six of them being in a cluster on the top of my left thumb, and I tried several methods to get rid of them. I remember that I used lunar caustic, acetic acid, muriatic acid, vinegar, ink, meat, and several other things suggested to me by various friends, but all to no avail. At last in desperation I got a sharp knife and cut some off while the blood streamed down my hands, which I washed away by holding under a pump as I had often been told that the blood where it flowed would cause other warts to grow. The warts grew again, however. An aunt of mine had had ten warts on her hands when a child and she told me that she had tried many things but had not succeeded in getting rid of them until an old man "charmed" them away. So I made up my mind to seek a "charmer" but could not find one for some time until by the help of some boy friends I was introduced to a man who kept an ice-cream barrow in Norwich marketplace and I patronised his barrow and got him interested in my warts. He asked me how many I had and I counted them up, and he made a note with a stick of pencil on the side of his barrow and said I must do nothing to the warts and think nothing about them and tell nobody and that in a month they would be gone. Three weeks passed and they did not seem to be disappearing much, but at the beginning of the fourth week they began to disappear rapidly and by the end of the fourth week they had shrivelled and dropped off. I have never been troubled with a wart since. I remember that during the month I was sceptical although I tried hard not to be.

I am, Sirs, yours faithfully,

London, March 18th, 1904. A READER.

NATIONAL ASSOCIATION FOR THE PREVENTION OF CONSUMPTION AND OTHER FORMS OF TUBERCULOSIS.

THE fifth annual general meeting of the National Association for the Prevention of Consumption and other Forms of Tuberculosis was held at 20, Hanover-square, London, W., on March 10th, Lord Derby being in the chair. The revenue account showed that during the year the expenditure had considerably exceeded the income—a circumstance which, according to a statement made by the treasurer, was causing some uneasiness. The report mentioned that in consequence of a visit made to Germany by delegates of the National Conference of Friendly Societies some of the council of the association and representatives of the Hospital Saturday Fund held a meeting at which it was decided to form a national committee for the establishment of sanatoriums for tuberculous patients belonging to the working classes. Attention was directed to the urgent necessity for an extension of the system of voluntary notification of phthisis and the by-law of the Sheffield corporation, which makes such notification compulsory, was referred to. The list of sanatoriums published by the association shows that in the United Kingdom there are about 70 of these institutions with a total of over 2000 beds. The majority of them, however, are for paying patients and there is great need for accommodation for patients belonging to the poorer classes. A recommendation was made at the meeting to the effect that the empty small-pox hospitals of the Metropolitan Asylums Board might be utilised in this way.

WANTED—A HOME.

A Medical Man writes:—"Can any reader kindly inform the writer if there is an institution other than a lunatic asylum in the north of England where a boy, seven years of age, who has been in a semi-imbecile condition since infancy, could be received with a view to bringing out what latent intelligence may exist? The parents are able to pay about 10s. weekly."

"THE PHYSICS OF THE DAMP BED."

REFERRING to an annotation in THE LANCET of March 12th, p. 737, under the above heading Dr. Herbert W. G. Macleod points out that hair elongates by absorbing water and contracts on drying, this property being utilised in de Saussure's hair hygrometer for determining the relative moistness of the atmosphere. Whether a substance stretches or shrinks under the influence of moisture depends, we may add, upon the peculiar structure of the substance. Bodies formed of filaments exhibit a greater increase in the direction of their breadth than of their length. Paper or parchment in which fibres interlace in all directions may expand or contract; twisted fibres such as ropes and strings swell and grow shorter; catgut and hair grow longer. Instruments depending upon this property are hardly to be trusted for exact purposes.

"THE DISTRICT NURSE."

A CORRESPONDENT writes:—"Can any reader of THE LANCET tell me the author and publishers of a book entitled 'The District Nurse'? It is an English publication and deals with district nursing up to the time of Queen Victoria's jubilee."

H. S. G. will find the facts connected with the King's attack of typhoid fever in THE LANCET of November and December, 1871. The building which fell under suspicion, Londesborough Lodge, near Scarborough, is fully described in our columns. The late Sir Oscar Clayton and the late Dr. Low share the honour of having detected the cause of the illness, Dr. Low remaining in attendance with the late Sir William Jenner and the late Sir William Gull.

Squire and Medico sends us two disgraceful puffs, one of the Espsñola Medicine Company and one of a woman who lives by so-called "beautifying" silly faded women. We may think it worth while to refer to the matter at some length.

J. L. B.'s interesting question will receive a detailed answer; recovery after such a period of immersion must be unusual.

F.R.C.S.E. asks if any medical man can inform him whether the "no-breakfast plan of fasting cure has any real merit."

Mr. M. Smith.—Our correspondent is advised to consult his usual medical attendant.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, March 24th, 1904.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radia in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
Mar. 18	30·00	S.W.	...	79	54	35	36	37	Foggy
" 19	30·13	S.W.	...	73	54	37	45	47	Cloudy
" 20	30·07	S.W.	0·06	66	56	47	47	48	Cloudy
" 21	29·99	S.W.	0·01	64	53	47	46	48	Cloudy
" 22	30·26	WSW	0·09	93	54	36	39	41	Hazy
" 23	30·28	N.	...	69	48	30	41	45	Cloudy
" 24	30·33	E.	...	78	48	29	41	43	Cloudy

During the week marked copies of the following newspapers have been received: *Irish Times, Yorkshire Observer, Edinburgh Evening News, Hull Daily News, Birmingham Daily Mail, Belfast News, Dublin Independent, Blackburn Telegraph, Pall Mall Gazette, Cork Constitution, Cork Herald, Bristol Mercury, Westminster Gazette, Hereford Times, Sanitary Record, Army and Navy Gazette, Gloucestershire Chronicle, Western Mail (Cardiff), South Wales Daily News, The Northern Whig, &c.*

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (28th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.).

TUESDAY (29th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Royal Ear (3 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.).

WEDNESDAY (30th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.).

THURSDAY (31st).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.).

FRIDAY (1st).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.).

SATURDAY (2nd).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

MONDAY (28th).—ODONTOLOGICAL SOCIETY OF GREAT BRITAIN (20, Hanover-square, W.).—7 P.M. Council. 8 P.M. Mr. J. H. Mummery will show Zeiss' Stereoscopic Microscope and Camera, also Stereoscopic Photographs of Colonies of Bacteria, &c. Paper:—Mr. D. E. Caush: Some Notes on the Enamel.

MEDICAL SOCIETY OF LONDON (11, Chandos-street, Cavendish-square, W.).—8.30 P.M. Mr. E. H. Fenwick: The Treatment of Urinary Tuberculosis.

TUESDAY (29th).—THERAPEUTICAL SOCIETY (Apothecaries' Hall, Blackfriars).—3.30 P.M. Council Meeting. 4 P.M. Exhibition of Books and Plates, from the Apothecaries' Company, of Microscopes and Spintharicopes, and various Therapeutical Appliances. Mr. W. Chattaway: Short Description of Photography in Natural Colour (illustrated by lantern slides).

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (28th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—3.30 P.M. Annual General Meeting.

TUESDAY (29th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. J. B. Squire: Clinique. (Medical.) 5.15 P.M. Dr. L. Sambon: Ticks and Tick Fevers.

WEDNESDAY (30th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. J. Smith: Clinique. (Surgical.) 5.15 P.M. Dr. L. Sambon: Ticks and Tick Fevers.

LONDON TEMPERANCE HOSPITAL (Hampstead-road, N.W.).—4 P.M. Lecture:—Diseases of the Stomach. (Post-Graduate Course.)

THURSDAY (31st).—THE HOSPITAL FOR SICK CHILDREN (Gt. Ormond-street, W.C.).—4 P.M. Mr. Lane: Operations for Cleft Palate.

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MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index and Title-page to Vol. II. of 1903, which was completed with the issue of Dec. 26th, were given in THE LANCET of Jan. 2nd, 1904.

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